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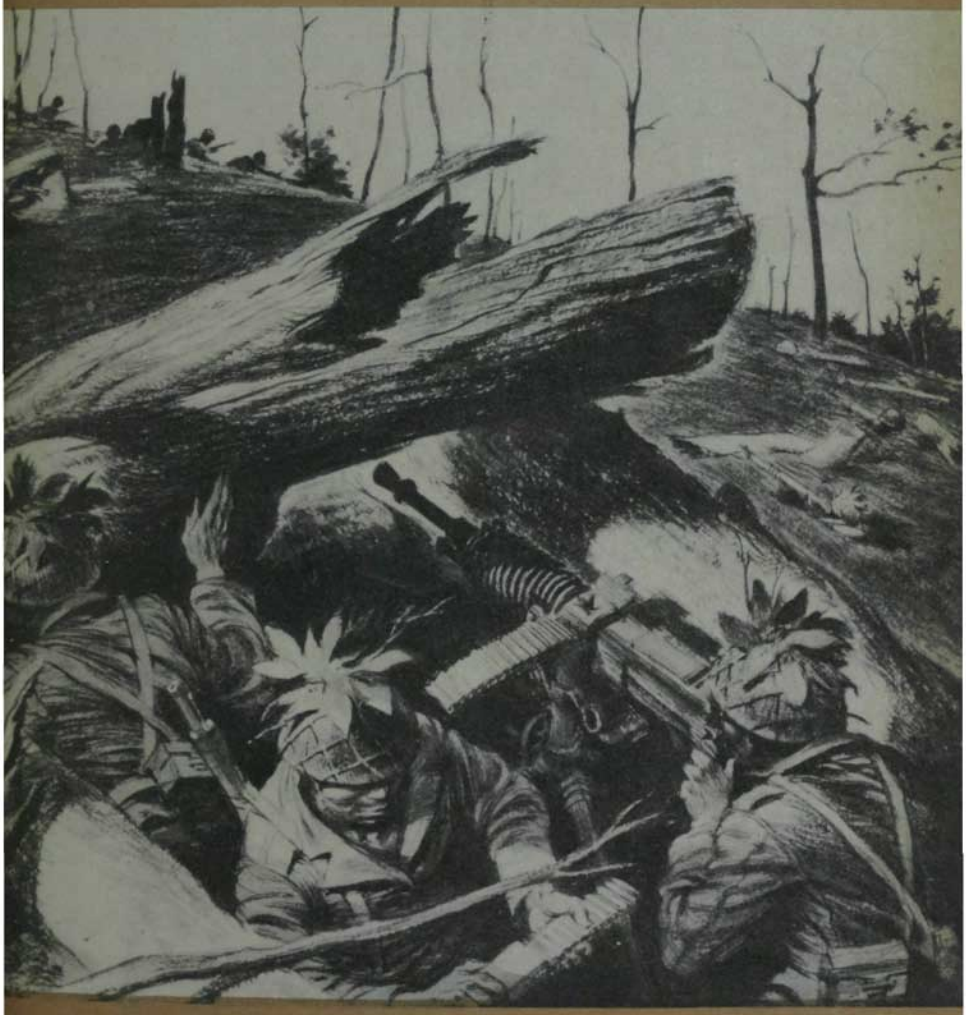

ILITARY INTELLIGENCE DIVISION • WAR DEPARTMENT • WASHINGTON D. C.

Have You Learned A Lesson About The Enemy?

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INTELLIGENCE BULLETIN

MILITARY INTELLIGENCE DIVISION
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Cover Illustration—A Jap machine gun emplacement on the flank of a reverse-slope position prepares to fire at American troops advancing against Breakneck Ridge during operations on Leyte (see story on page 1).

Enemy infiltrators would cut the telephone wire lines and then ambush the linemen who came to repair the break (page 5).

BREAKNECK RIDGE

A Lesson in Jap Defensive Tactics

The Japanese soldiers who fought in defense of Breakneck Ridge, a broken series of hills in Ormoc Valley, Leyte, delivered a lesson in Jap tactics heretofore seldom encountered in the Pacific. In a 12-day period last November, they proved that there are well disciplined Japanese troops capable of fighting an astute defensive battle—a battle based upon sound tactical doctrine, rather than upon a dogged determination to die for the Emperor.

"All who contacted the enemy were impressed with his excellence in battle," a U.S. colonel said. "Little was noted of reckless charges, needless sacrifices, or failure to observe known tactical principles." The colonel, commanding officer of a U.S. infantry regiment, gave a description of what is to be expected from one of the better Japanese infantry divisions operating in defense of rough, easily defended terrain.

"The outstanding enemy characteristic," said the colonel, "was his excellence in fire discipline and his control of all arms. Without exception, enemy fire was withheld until the moment when its delivery in great volume would give greatest effect."

It was on 5 November, during the early stages of the American push down the Ormoc River valley, that a U.S. infantry regiment advanced to secure the high ground south of Pina-

mopoan village. This area was occupied by the bulk of the Japanese First Infantry Division—a crack outfit of the infamous Kwantung Army, with long experience in Manchuria. The Japs on the forward slopes of the first ridge allowed their positions to be bypassed by two reinforced companies of the 3rd Battalion.

FIRE DISCIPLINE

"The enemy," said the colonel, "in approximate strength of one battalion, remained quietly in such concealment that two companies advanced apparently without opposition. Then the enemy opened fire with such great effect that the two forward companies found themselves completely isolated and unable to move, to receive supplies, or to evacuate wounded. Only by superhuman efforts on the part of the remainder of the regiment were these two companies extricated."

During the following 10 days, there were numerous instances when Japanese troops—often in strength of a rifle company in bunkers, and supported by eight to a dozen machine guns, and mortars—would permit the cautiously moving advance elements of an American attack to bypass the excellently concealed Jap positions. Then the defenders would open fire on reserve troops moving up in more compact formations.

DEFENSE

As the U.S. attack developed, the Americans discovered that every reverse slope in the area was well defended. "The enemy used reverse-slope defense tactics effectively," said the colonel. "Every foot of the terrain attacked was used properly for defense. All the Jap positions were mutually supporting."

"Most enemy foxholes were constructed in the shape of an inverted boot," he continued. "The fire step and firing position toward us was in the 'toe,' and the deep 'heel' was used to retire into for cover during our artillery and mortar fire. Enemy

artillery pieces were located in covered emplacements, well concealed, with deep caves behind the gun for protection of the gunners."

That the enemy defenses were well organized was vouched for by a U.S. lieutenant who, wounded, spent two days behind the Jap lines before he could work his way back to his own troops. The lieutenant, who had ample time to observe the enemy, reported machine-gun positions near draws and noses of the ridges. The guns would be placed on the forward slopes, and when artillery or mortar fire fell near the gun positions, the gun crews would calmly abandon their weapons and, by means of a previously prepared trail, move around a nearby corner of the hill to a protected reverse slope position. The gunners would reoccupy their original positions immediately after the American fire ceased. All during the night the Japs moved up supplies and ammuntion by hand cart.

The mere fact that a Jap position was enveloped or encircled did not cause the enemy to withdraw. "Too great an emphasis had been placed on training that mere encirclement meant a successful action," said the colonel. "The team play of the encircling force, large or small, had to be continued through the stages of occupation of the position, close combat within the position in conjunction with the frontal effort, and complete mopping up."

COUNTERATTACK

Throughout the entire 12-day period during which the colonel's regiment was attacking, the enemy followed a careful plan of active defense. During the morning and the early afternoon hours, the Japanese resistance was generally light. However, it began to increase at about 1530 hours, and by 1600 hours was extremely heavy. From then until dark, counterattacks were launched with increasing intensity against the front

and flanks of U.S. units, and from between units that had no flank contact with each other.

"By building up resistance late in the afternoon, and by counterattacking in force before dark, the enemy was able to bring greatest fire upon our assault troops, with demoralizing and disorganizing effect, at a time when our energy and ammunition were as nearly exhausted as they would be at any time during the day," the regimental commander said. "Also," he added, "it prevented proper consolidation of front positions before dark."

Enemy counterattacks were supported by fire from mortars and automatic weapons. "The typical shrieking, hysterical, so-called 'Banzai charge' was noticeably not employed," he said. "Night attacks on our perimeters, although frequent, were not as SOP as is usual with Japanese forces." There were no counterattacks at all during six of the nights.

Many of the counterattacks were delivered by Jap infantrymen who crawled all the way to the American assault positions. Invariably these Japs had their helmets camouflaged with grass and weeds. "Often the first indication of an approaching attack would be when outposts spotted grassy helmets moving in the deep cogon grass," the colonel said. "Our own men had elastic bands around their helmets for the purpose of inserting grass and twigs, and often our defenses hesitated to fire as identification was difficult."

The colonel said that many of our rifllemen failed to dig their foxholes deep enough, with the result that they were unable to stand upright during enemy mortar fire but were forced to crouch. This worked to their disadvantage for, in this position, they were unable to observe the action and the enemy was able to come within bayonet range. The colonel contended that if the foxholes had been deep enough, the American infantrymen could have remained erect, firing from cover at the counter-

attacking Japanese. However, the regimental commander pointed out that in no case was a Jap attack on one of his units' perimeters successful. "Flame throwers and white phosphorus were particularly effective, and literally made the Japs squeal," he said.

So active was the Japanese defense that movements in column had to be guarded by riflemen deployed for security to the front, flanks, and rear. This was particularly true of tanks, which had to be guarded against suicide attacks by Jap soldiers armed with demolitions.

SNIPERS

As might be expected, the Japs defending the Breakneck Ridge area made use of snipers and infiltrators. However, the snipers did not operate singly in trees, but seemed to work in nests of three or four on the ground. "Snipers seldom if ever fired at vehicles," the colonel said, "no matter how loaded with troops they appeared to be. However, the snipers continually were firing at foot troops on roads, individuals as well as formations."

Working in groups as they did, the snipers were able to deliver a volume of fire at once. This was done even far behind the front lines. When firing at a single man, only one sniper would shoot so as not to disclose the sniper position any more than was necessary. Although captured American ordnance was used by the Jap infantrymen, the snipers used only Japanese rifles, many of them with telescopic sights. "Their fire was extremely accurate," the colonel commented.

During the nights, enemy infiltrators would work their way into the American rear and cut telephone wire lines. Then they would wait to ambush linesmen who came to repair the break. Litter bearers and aid men also were the particular targets of these harassing tactics.

"Enemy artillery always fired into our positions when our own artillery was firing in close support of our advances," the colonel said. "Often this caused calls from rifle units to our artillery to cease firing. Enemy mortars followed the same practice, as did enemy small arms, which fired when our automatic weapons fired."

The U.S. regiment, which was under orders to "maintain the initiative at all cost", was able to advance 2,000 yards in bitter combat during the twelve days it was in action. At the end of that period the American infantrymen had counted 1,779 enemy dead from one of the Mikado's finest divisions.

A Short History of *Japanese Military Rifles*

Many a U.S. soldier fighting in the Pacific has heard the sharp snap of an "Arisaka" in the jungle, and has ducked for cover. Under such circumstances, the soldier usually gives little thought to the history and characteristics of the rifle in the Jap sniper's hands. But even under more leisurely conditions the average American soldier, after examining a Jap riflle, is apt to jump to the conclusion that the weapon is a makeshift imitation of American bolt-action rifles.

Such a conclusion is wrong, for the Japanese military rifle is a product of development over many years by Jap ordnance officers who drew heavily upon their knowledge of, and experience with, European bolt-action rifles, particularly the German Mauser series—the forerunners of our own familiar "Springfield."

European firearms first made their appearance in Japan about 1540, when a small number were purchased from Dutch traders. During the next 300 years, purchases of various European firearms, many of them of Spanish design, were made from the Dutch by individual feudal lords. The Dutch also

gave some instruction in the use of the weapons and in the art of gunsmithing. Before long this enabled certain of the feudal lords to set up their own small arsenals for the purposes of powder manufacture, gun repairs, and, to a limited degree, the manufacture of firearms.

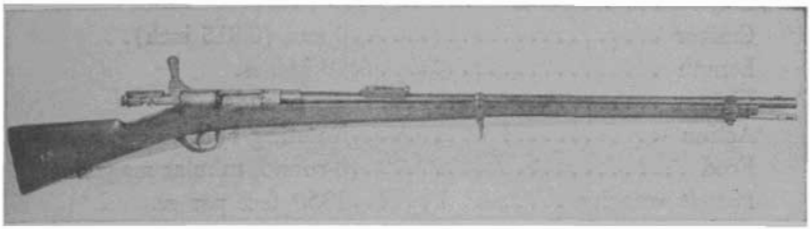
By the middle of the 19 century, the Japanese had become exceedingly gun-conscious, and the government encouraged the art of gun-making among the various clans. In addition, the importation of guns was accelerated greatly, particuarly during the years from 1861 to 1863.

At this time the most popular weapon was the Dutch smoothbore musket known to the Japanese as the *Geweer*. But in 1865 a number of French officers were engaged by the Shogun to instruct his army, with the result that the *Geweer* was subsequently replaced by a French *Minie*.

Following the overthrow of the Shogun and the Meiji Restoration in 1868, arsenals which had belonged to the clans were bought by the Arms Office to standardize weapons production. During the next ten years the Japanese attempted many changes in their rifles. After adopting the British Army's M1855 rifled musket known as the Enfield (one frequently used by the Confederacy during the U.S. Civil War), the Japanese introduced the Snider conversion used by the British to turn Enfields into breechloaders. They also bought and built breech-loading rifles like the British M1867, which incorporated the Snider action. A French conversion was also used, together with quantities of the bolt-action M1866 French infantry rifle known as the Chassepot.

The first standard military rifle of Japanese design was invented by an infantry major, Murata, Tsuneyoshi in March, 1880. Despite Japanese claims to the originality of this weapon, the Murata rifle resembles the much earlier Chassepot to a marked degree, being a single-shot weapon, of 11-mm caliber, with a rotating bolt action.

11-MM RIFLE, MODEL 13



First used in the conflict with China in 1894-1895, the workmanship in the Model 13 (1880) 11-mm rifle (Murata) is excellent. It has no provision for a safety lock or for the quick removal of the bolt. The bayonet lug is located on the right side of the upper band, and there is no hand guard above the barrel.

The early models of this rifle were designed to fire ammunition with paper cartridge cases. Later models used a thick rimmed bronze case, firing a lead bullet with a lead and zinc jacket.

Caliber	11 mm (0.433 inch).
Length	50.25 inches.
Weight	9.2 pounds, without sling.
Barrel length	31.38 inches.
Action	Rotating bolt.
Feed	Single shot.
Sights	Blade front sight, leaf rear sight graduated from 200 to 1500 meters.

8-MM RIFLE, MODEL 20

The Model 20 (1887) 8-mm rifle (Murata) was also invented by Major Murata, although examination clearly shows that he borrowed extensively from the standard French Model 1886 "Lebel" 8-mm rifle and the French navy model 1878 "Kropatschek" of the same caliber. The outstanding features of all three weapons are the reduced caliber, the use of a modern-type cartridge, and the tubular magazine.

It is interesting to note that this weapon was given exhaustive tests by the U. S. Army from 1890 to 1892 in a program to select a new service rifle. Tests indicated that its performance was not satisfactory, particu-

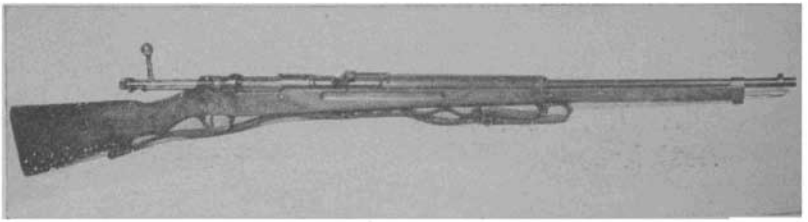
larly in regard to the feed mechanism. Although it is fitted with a cutoff, no safety lock is provided.

Caliber .....8 mm (0.315 inch).
Length .....48 inches.
Weight .....9.0 pounds.
Action .....Rotating bolt.
Feed .....8-round, tubular magazine.
Muzzle velocity .....1850 feet per second.
Weight of complete round .....468 grains (1.07 ounces).
Weight of bullet .....238 grains.
Weight of propellant .....36 grains.

8-MM CAVALRY CARBINE, MODEL 27

The Model 27 (1894) 8-mm cavalry carbine is similar to the Model 20 8-mm rifle, except that it is fitted with a shorter barrel, the length of which is not known.

6.5-MM RIFLE, MODEL 30



As the result of the findings of a commission headed by Colonel Arisaka, the Model 30 (1897) 6.5-mm rifle (Arisaka) was invented by Murata, and replaced the earlier models 20 and 27. In designing this piece Murata made a close study of Mauser and Mannlicher rifles, combining some of their best characteristics. Outstanding features are the reduction in caliber to 6.5 mm, the use of a clip-fed staggered column magazine, and the earlier Mauser system of bolt locking. Although subsequently modified, this weapon is fundamentally of the same design as those in use at present.

Caliber .....6.5 mm (0.256 inch).
Length .....50.2 inches.
Weight .....8.5 pounds, without sling.

Barrel length .....31.25 inches.
Feed .....5-round clip.
Sights .....Blade front sight, leaf rear sight graduated from 300 to 2000 meters.
Safety lock .....Hook mounted on cocking-piece. (May be locked only when bolt is forward and cocked. Applied by pulling back on cocking-piece, and rotating quarter-turn clockwise.)
Muzzle velocity .....2380 feet per second.
Weight of bullet .....162 grains (0.37 ounce).
Weight of propellant ....33 grains.

The Model 30 (1897) bayonet was designed concurrently with the rifle and has since been used on all subsequent models.

6.5-MM CAVALRY CARBINE, MODEL 30

In 1899 a cavalry carbine was produced which, except for its shorter barrel, conforms to the design of the Model 30 rifle. The length of the barrel is not known.

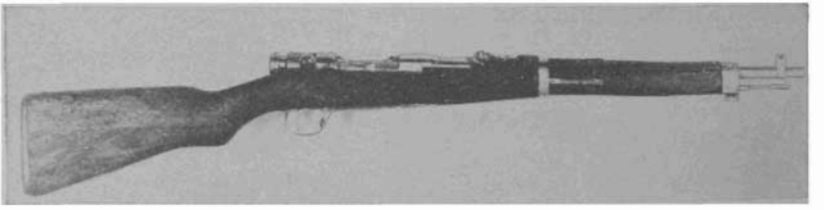
6.5-MM RIFLE, MODEL 38

As a result of experience gained in the Russo-Japanese War, certain modifications were made in the Model 30 rifle and carbine. These improvements consisted primarily of modifications to the extractor and the safety lock. In addition, a sliding cover was added to prevent dirt from interfering with the bolt action and also to protect the firer from back-flash. Although more recent weapons have been developed, the Model 38 (1905) 6.5-mm rifle is still in general use throughout the Japanese Army.

Caliber .....6.5 mm (0.256 inch).
Length .....50.2 inches.

Weight .....8.95 pounds, without sling.
Barrel length .....31.5 inches.
Feed .....5-round clip.
Sights .....Blade front sight, leaf rear sight, graduated from 300 to 2400 meters.
Safety lock .....Knurled plunger on rear of bolt. (May be locked only when bolt is forward and cocked. Applied by pressing forward and rotating clockwise.)
Muzzle velocity .....2400 feet per second.
Maximum range .....4300 yards.
Ammunition .....Ball, semi-rimmed case.
Weight of complete round .....323.8 grains (0.74 ounce).
Weight of bullet .....137.7 grains.
Weight of propellant ....33.9 grains.

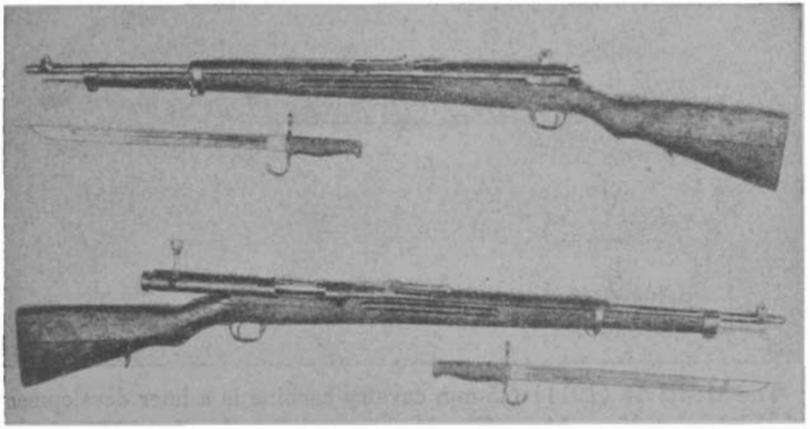
6.5-MM CAVALRY CARBINE, MODEL 38



Following previous practice, a short-barrel version of the Model 38 rifle, the Model 38 (1905) 6.5-mm cavalry carbine, was developed for the cavalry. The weapons are fundamentally identical; variations from the parent model are listed below:

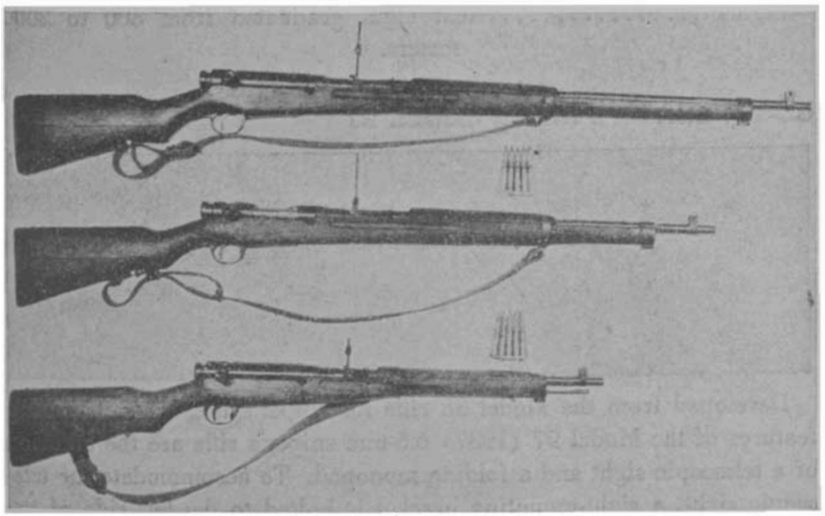
Length .....38 inches.
Weight .....7.8 pounds, without sling.
Barrel length .....19 inches.
Sight .....Rear sight graduated from 300 to 2000 meters.
Performance .....Muzzle velocity and maximum range are slightly reduced owing to shorter barrel.

6.5-MM SHORT RIFLE, MODEL 38



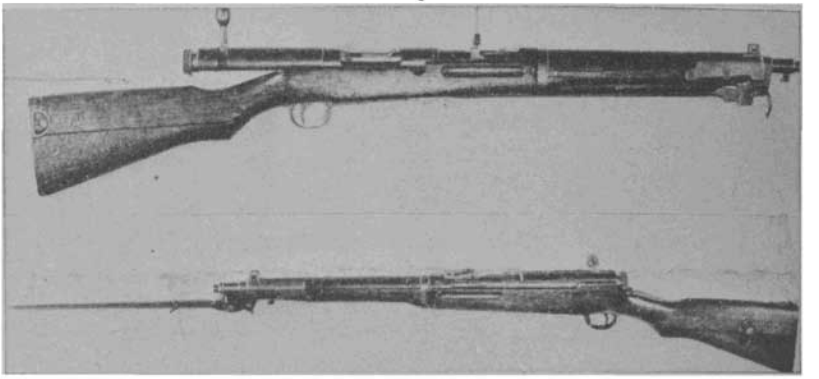
The Model 38 (1905) 6.5-mm short rifle weapon is similar, except in barrel length, to the Model 38 rifle and carbine. As only isolated specimens have been recovered, its purpose is not clear.

Length .....44.25 inches.
Weight .....8.4 pounds, without sling.
Barrel length .....25.25 inches.



Three varieties of the Model 38 (1905) 6.5-mm rifle showing comparative sizes. From top to bottom: The rifle, short rifle, and the cavalry carbine.

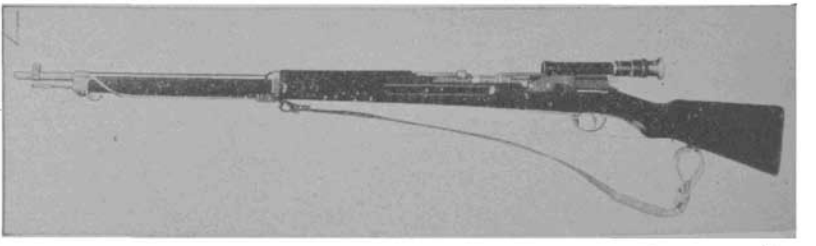
6.5-MM CAVALRY CARBINE, MODEL 44



The Model 44 (1911) 6.5-mm cavalry carbine is a later development of the Model 38 carbine. The Model 44 differs by the addition of a permanently attached folding spike bayonet and the transfer of the sling swivels to the left side of the stock.

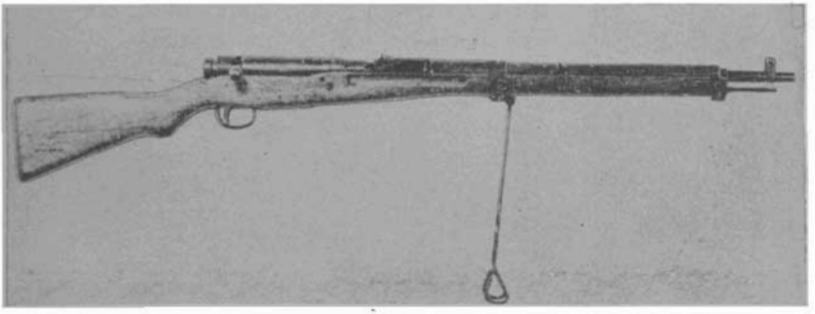
Caliber .....6.5 mm (0.256 inch).
Length .....38.25 inches.
Weight .....8.75 pounds.
Barrel length .....19.37 inches.
Sights .....Rear sight graduated from 300 to 2000 meters.

6.5-MM SNIPER'S RIFLE, MODEL 97



Developed from the Model 38 rifle for sniper's use, the outstanding features of the Model 97 (1937) 6.5-mm sniper's rifle are the addition of a telescopic sight and a folding monopod. To accommodate the telescopic sight, a sight-mounting bracket is bolted to the left side of the receiver and the bolt handle has been lengthened and bent downward to clear the sight.

7.7-MM RIFLE, MODEL 99



This is the modern Japanese rifle, which is gradually replacing the Model 38. Compared to the earlier model, the outstanding developments found in the Model 99 (1939) 7.7-mm rifle are the increased caliber and reduced barrel length. While differing in several additional points, the fundamental design of the weapon has remained unchanged. New features are a folding monopod, antiaircraft lead arms fitted to the rear-sight slide, magazine floor-plate hinged to the trigger guard, and sling swivels attached to the left side of the stock.

This rifle enables the Japanese to fire a bullet comparable to present day U. S. and British standards. A considerable variety of ammuntion is in general use, none of which, however, is interchangeable with U. S. and British types of approximately similar caliber. It has been frequently stated that owing to the increased recoil and muzzle-flash of the Model 99, the average Japanese soldier still prefers the smaller caliber Model 38.

In addition to the standard Model 99, the specifications of which are given below, a long-barrel version is thought to exist. It is probable that this is a 50-inch sniper's rifle, fitted with a telescopic sight.

Caliber .....7.7 mm (0.303 inch).
Length .....44 inches.
Weight .....8.3 pounds, without sling.
Barrel length .....27.25 inches.
Sights .....Rear sight graduated from 300 to 1500 meters.
Muzzle velocity .....2390 feet per second, with Model 99 ball.
Maximum range .....3700 yards.
Ammunition .....Model 99 rimless; ball, armor piercing, and incendiary.

Model 99 ball ammunition

Weight of complete round .....417 grains (0.95 ounce).

Weight of bullet .....189 grains.

Weight of propellant ....41 grains.

The recent recovery of a modified Model 99 (1939) 7.7-mm rifle is of extreme interest as it indicates a relaxation in the standard of manufacture, possibly in an attempt to speed up production. The points of variance from the standard pattern are as follows:

(1) Monopod omitted.

(2) Antiaircraft lead arms omitted.

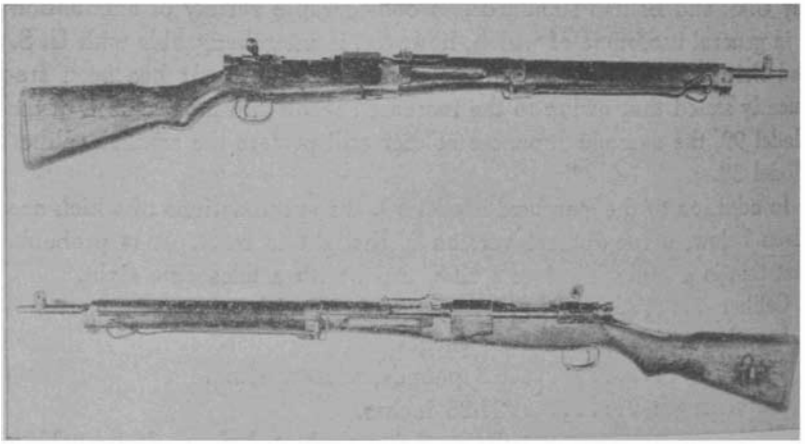
(3) Rear sight welded to mount.

(4) Bolt knob cylindrical instead of usual oval slope.

(5) Safety lock no longer knurled, but left unfinished.

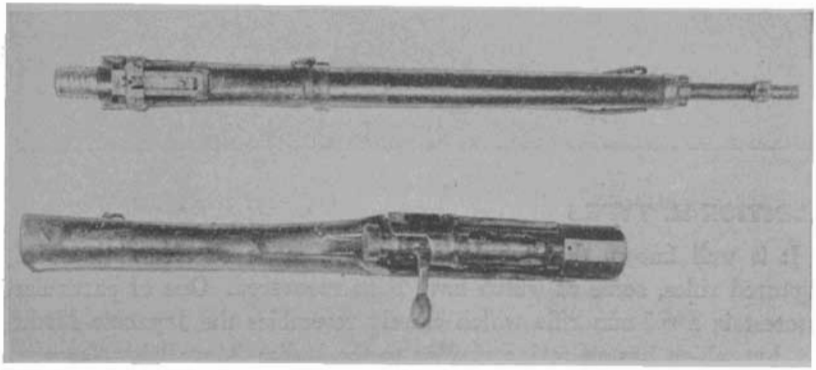
(6) Inferior quality stock.

7.7-MM TAKEDOWN RIFLE, MODEL 99

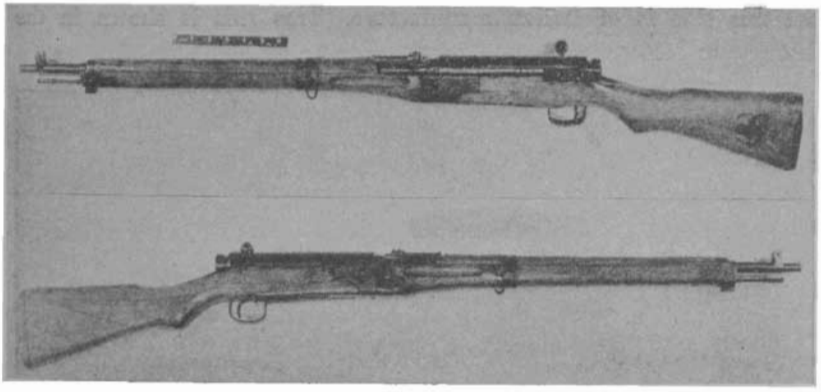


Although it has been known for some time that Japanese paratroops were equipped with a special rifle, it is only recently that specimens have been recovered. The Model 99 (1939) 7.7-mm takedown rifle is merely a modification of the standard weapon of the same caliber, has the same performance, and an increase in weight of 0.3 pound. In

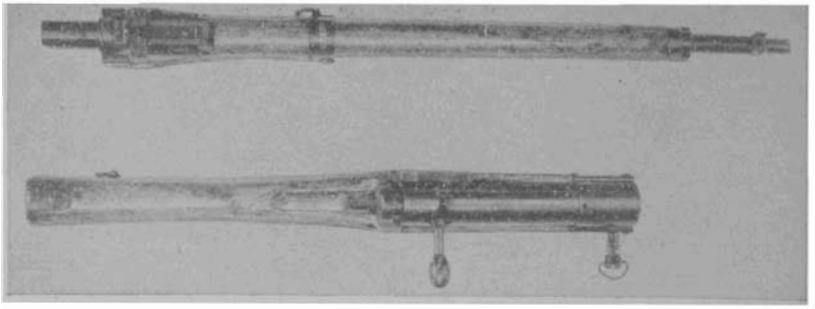
order to achieve convenient packing for paratroop use, the barrel is quickly detachable. This is achieved by means of an interrupted thread which joins the barrel to the receiver. A spring-loaded plunger locks the two assemblies in position. In addition the bolt handle is detachable. The standard of workmanship is poor throughout.



7.7-MM TAKEDOWN RIFLE, MODEL 2

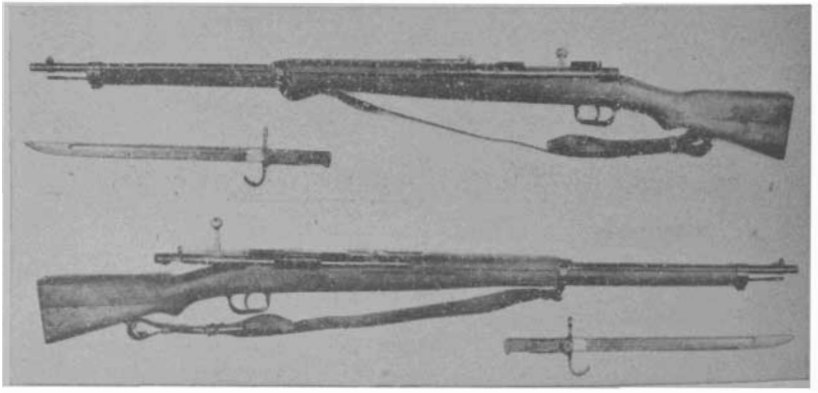


The Model 1 (1942) 7.7-mm takedown rifle represents an improvement over the Model 99, and its change in model number indicates that it has become the standard takedown design. Although takedown actions are inherently weak, the design and good workmanship make this rifle one of the strongest of its type. The barrel is locked to the receiver by means of a heavy locking lug and a cross-key. Unlike the Model 99 takedown, the bolt handle is not detachable, and the monopod has been removed.



ADDITIONAL TYPES

It is well known that the Japanese have made considerable use of captured rifles, some of which have been recovered. One of particular interest is a 6.5-mm rifle which closely resembles the Japanese Model 38, but which has an action similar to the Italian Mannlicher-Carcano. The absence of Japanese characters, and the fact that the "Beretta" mark is stamped on the receiver and other parts, supports the theory that this rifle is of Italian manufacture. This rifle is shown in the photograph below.



A JAP REPORT

ON AMERICAN TACTICS AT GUAM

When a U.S. task force landed on Guam last July, not all the Japanese stayed to die for the Emperor, or to take up residence in a prisoner-of-war cage. A group of staff officers, following an established Japanese custom, executed a strategic withdrawal before the battle grew too old, and lived to write a report on U.S. Army tactics and the conduct of American soldiers in combat.

The observations of these officers, who were credited with having "continuously commanded the front-line troops on Guam for several days," were circulated among other Japanese units as a "Special Battle Lesson Report." Each unit was directed to consider the lessons learned about U.S. tactics, and to apply such countermeasures as were recommended. The violent Japanese reaction to the subsequent American landing on Peleliu Island, when studied in the light of these battle lessons, indicates that the report was well received by the Japanese on that island.

COMMENTS ON COMBAT

During the discussion of combat tactics, the Japanese observers paid special interest to the activity of U.S. "infantrymen":[1]

In infantry combat, the Americans will invade through gaps in our line, and immediately and boldly will begin to construct barbed wire

[1] The majority of American troops on Guam were U. S. Marines.

entanglements and earthworks. However, the enemy (U. S. troops) will withdraw immediately if a diversion is created on his front by part of the (Japanese) unit, while the main strength simultaneously attacks from the rear of the flank. Prepare in advance heavy concentric rifle, mortar and artillery fire upon the point to be attacked.

When advancing with tanks, approximately 10 American infantrymen will accompany each tank, regardless of the presence of our men, and will execute demoralizing fire to the front and to the flanks. They will advance and halt with regulated movements. Upon discovering our suicide (antitank) attack units, the Americans will not close in, but will continue to fire until every defender is exterminated. Since in many cases the enemy will seize the initiative of firing before we can attack them, the opportunity to make suicide attacks is rare. Therefore, defenders, weapons and suicide attack units must not be enticed by the enemy fire to commence firing and thereby reveal our positions. Instead we should open surprise fire, or launch a surprise attack, from concealed positions.

Although the American tactics are extremely varied and powerful, they will never charge into hand-to-hand combat. Yet they are quite skillful in the use of hand grenades. American night operations are noisy and poor, on the whole. In the pursuit, American troops will use native guides and try to use bypaths to infiltrate through gaps in our lines. Even tanks are so employed.

The Americans abuse their ample supply of ammunition by firing at random with no target in view. However, they are skillful in manipulating the line of fire.

COMMENTS ON SECURITY

Security patrolling is performed skillfully by the Americans, who will use natives and dogs. However, American troops pay too much attention to local security, and reconnaissance is practically neglected. When advancing, the enemy simply lays down demoralizing fire along his flanks and the roads of advance only. There is practically no close and distant reconnaissance along the flank and road sectors.

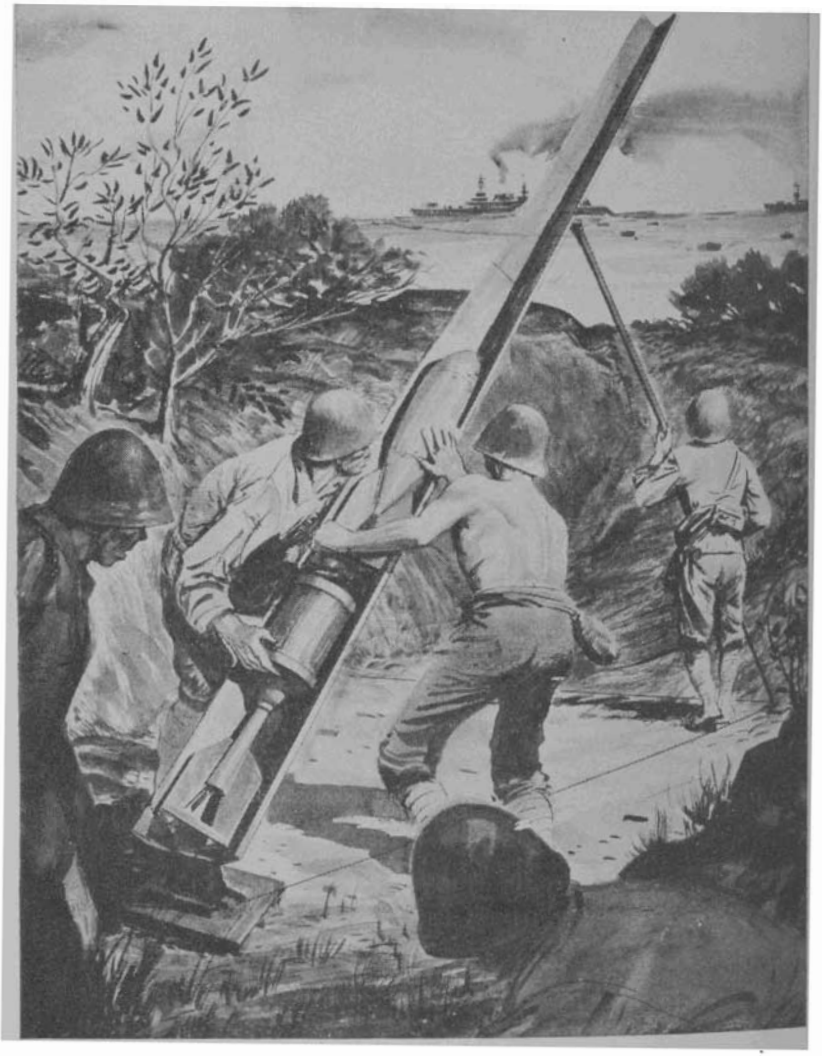
COMMENTS ON BIVOUACS

In bivouac American troops audaciously will pitch tents right in the rear of the front line, and, if necessary, will guard them with electric

lights all around. The Americans are very noisy during meal hours, and there is an opportunity for surprise attacks against American bivouacs immediately after dusk. Whenever they halt, however, they build positions. Small units will establish simple fortifications and barbed wire entanglements. Large units will make strong positions by using mechanical power.

Thus, having analyzed their American opponents, the Emperor's officers on Guam decided that "the individual American soldier is inferior," and closed their report with a grand generalization:

In view of the foregoing battle instructions, find the weak points of the well-equipped Americans and take advantage of the opportunities. Try to combine our thorough training with the original planning so as to be able to display the power of our traditional charging attack.



Japanese troops loading a Model 10 rocket launcher of the type captured by U. S. troops on Saipan. Only one launcher of this type has been found, and it is believed to be the result of early Jap experiments with rocket-propelled projectiles.

Japanese Development of *Rocket Weapons*

Although the Japanese were unprepared for rocket warfare when it suddenly became an important factor, there is definite evidence that they were experimenting with rocket-propelled projectiles before they plunged into the war in 1941. Since that time, events have proved the Japanese ready to use rocket weapons in land warfare, at least on a limited scale, and there are indications that improvements in Jap rocket weapons, and an increase in their tactical use, must be expected.

Japanese interest in rocket-propelled projectiles may be attributed to the Japanese "theory of the heavy shell" and to the inability of Japan's industry to produce heavy artillery on a sufficiently large scale.

The "theory of the heavy shell", according to the Japanese military writing, is based upon the premise that the weight of the projectile is the only means of measuring the effectiveness of the weapon from which it is delivered. Heavy artillery, which is cumbersome and expensive, throws a shell that is only a fraction of the weight of the gun. On the other hand, an

equally heavy shell can be thrown from a mortar or a rocket gun which, compared to a heavy artillery piece, is much lighter, more mobile, and cheaper and easier to manufacture. Although heavy artillery can greatly outrange the cheaper weapons, this advantage is offset by the fact that mortars and rocket projectors can be brought sufficiently far forward to engage many targets normally covered by artillery.

In May 1944 the Japanese chiefs of ordnance admitted that "it is impossible to supply those types of ordnance which are not available, such as cannon above field artillery class". Undoubtedly this, and the added example of successful Allied and German rocket weapons, has added impetus to the development and manufacture of rockets in Japan. Oddly enough, much of the development of rocket weapons has been done by the Japanese Navy.

MODEL 10 ROCKET LAUNCHER

The first Japanese rocket weapon encountered by U.S. troops was the Model 10 rocket launcher captured on Saipan. No instance of its having been used was reported. The launcher and its projectile are so crude that they may be classed either as improvisations or as the results of an early Jap experiment in rocket-propelled projectiles.

The launcher consists of a reinforced wooden trough mounted on a small iron base plate and a bipod made of iron pipe. The base end of the trough is covered by a detachable cover. This crude weapon was intended for launching a Japanese Navy Model 97 No. 6 aerial bomb propelled by a specially designed rocket motor. Resembling a short-bodied, blunt-nosed bomb, the cylindrical motor contains a propellant of three sticks of smokeless powder weighing 13 pounds. A finned tail assembly with Venturi tube is screwed to the rear of the motor cylinder,

and a metal cap is welded on the front. Slots are cut in this cap to receive and hold the fins of the aerial bomb.

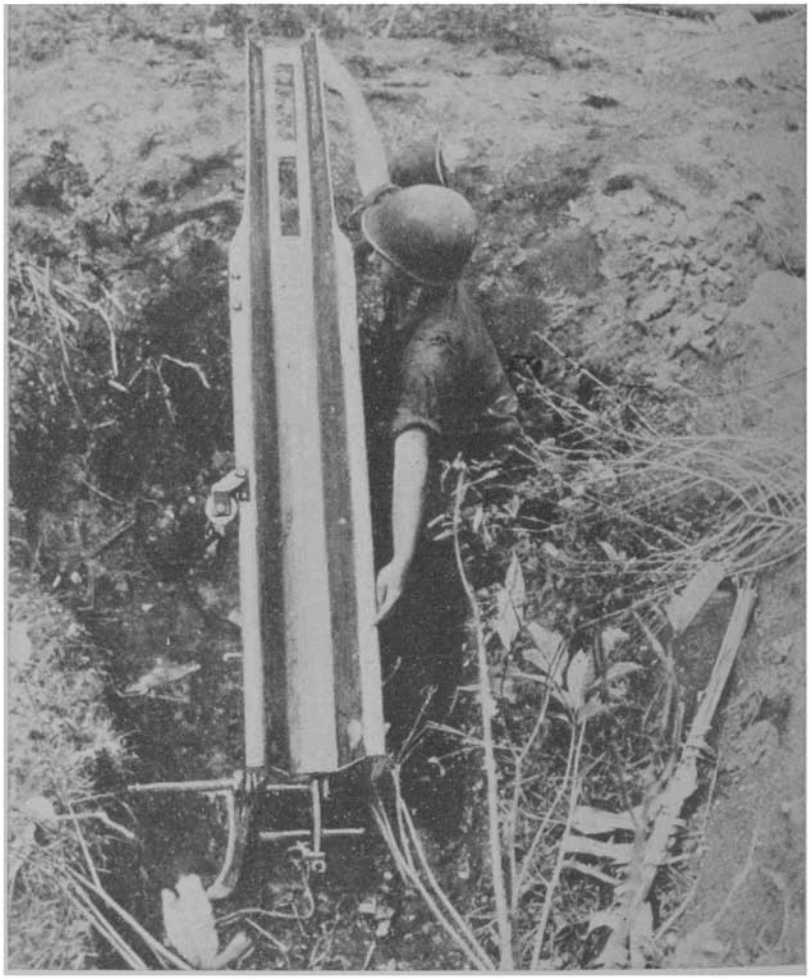
According to the Japanese, the Model 10 projector is capable of launching the 132-pound bomb, propelled by this motor, to ranges varying from 770 yards at 30 degrees elevation to 1,300 yards at 50 degrees elevation. The accuracy of such a weapon is questionable.

20-CM ROCKET

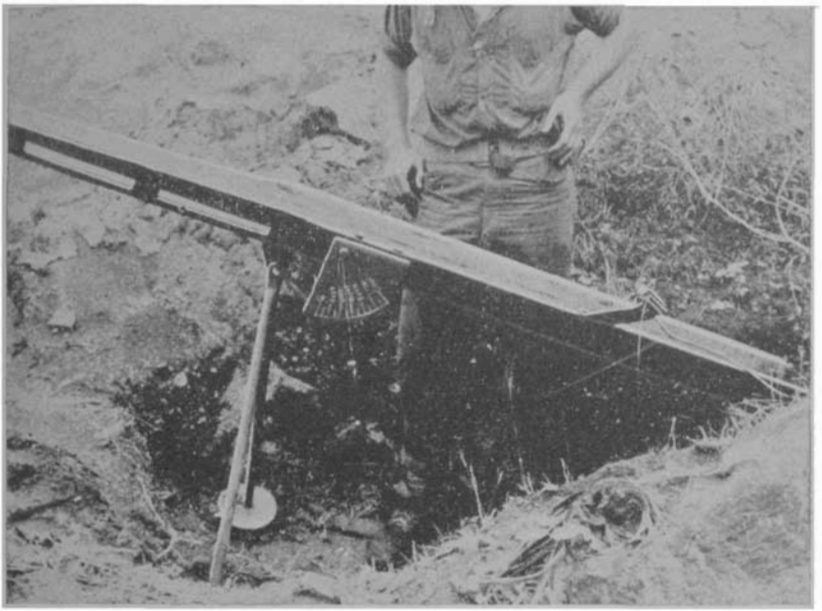
After U.S. troops had captured Palau, Ordnance Intelligence personnel turned up evidence of further rocket development in Japan when they found a portion of a 20-cm rocket, which resembled in form an 8-inch artillery shell. Later, U.S. soldiers charging up the beaches of Leyte Island captured a number of these rockets and their launchers emplaced in carefully prepared positions along the coast. These positions were abandoned by the Japanese, and no attempt was made to counter the American invasion with rocket fire.

As with the Saipan weapon, the Leyte rocket launchers consisted of troughs. The Leyte launchers, however, had been manufactured more carefully, the trough consisting of 3/16-inch iron in three sections. This launching trough is supported by two 1-inch pipe bipods, one forward, the other near the base, which can be adjusted to vary the elevation, and consequently the range, of the weapon. A percussion striker operated by a lanyard is mounted at the base of the trough. Figures inscribed on the launcher give ranges varying from 450 meters at 10 degrees elevation to 1,600 meters at 60 degrees elevation.

Although the launcher, like the Model 10, is a crude device, the 20-cm rocket it delivers is a vast improvement over the original rocket-propelled bomb. Approximately 41 inches long, and weighing about 200 pounds, this shell-like rocket is made



A 20-cm rocket launcher found emplaced on one of the beaches of Leyte. This trough-like launcher is equipped with a percussion device at its base for firing the rocket. A number of launchers were found in positions built to cover with rocket fire the logical ship anchorage in the vicinity of Tacloban. However, the positions were overrun by U. S. troops, and the launchers captured, before any ships moved within range.



Another view of the Leyte launcher showing the forward bipod and the graduated scale of the crude ranging device.

in two parts—the explosive-filled head, and the propellant-filled motor body. The two parts screw tightly together to resemble a long artillery shell. The propellant housed in the motor body consists of seven sticks of rocket fuel.

The base of the rocket is fitted with a motor base plate in which six holes, evenly spaced around the circumference, are drilled sideways at an angle of 25 degrees. When the rocket is fired, these holes act as nozzles for the escaping gas of the burning propellant. The gas, when escaping through the nozzles, not only drives the rocket forward, but gives it a clockwise spin, thus stabilizing the rocket during its flight. A seventh hole is drilled through the center of the motor base plate and holds the percussion cap. As with an artillery shell, the explosive head of the rocket is fitted with a point-detonating fuze.

This rocket may be recognized readily by its color markings,

which conform to the color scheme for Japanese naval projectiles. The body of the rocket is painted maroon with the exception of a green band painted around the nose of the rocket, and a yellow band at the junction of the explosive head and the motor body.

44.7-CM ROCKET

After the U.S. landings at Lingayen Gulf, and the subsequent drive to Manila, Ordnance Intelligence officers on Luzon turned up further evidence of Jap rocket development when they found a quantity of large rockets measuring 44.7-cm in caliber. Although preliminary reports concerning this projectile are brief, it is evident that the rocket is of the same type as the 20-cm rocket. Resembling somewhat a 16-inch shell, this huge rocket is 69 inches in length, of which 41 inches make up the explosive head. As with the Leyte rocket, this large edition is propelled and stabilized in flight by burning exhaust gases escaping through six angled jets in the base of the rocket motor—40 sticks of rocket fuel compose the propellant. The whole rocket is estimated to weigh between 1,500 and 2,000 pounds. No fuzes or launcher were found with the rockets.

The discovery of rockets in quantity in the Philippines was evidence that the Japanese were working seriously on the principle of rocket propulsion for combat weapons. However, the crudeness of the launcher when compared to the progress the Japs had made in developing a rocket projectile, led Intelligence personnel to conclude that the trough-like launchers were merely a temporary device to be used until a more finished rocket launcher could be put into large-scale production.

EXPERIMENTAL 20-CM ROCKET GUN

These suspicions were confirmed recently with the discovery of the existence of what the Japanese call the Experimental

20-cm Rocket Gun. Weighing 550 pounds, this launcher resembles the conventional mortar in that it is composed of a barrel, bipod, and base plate. The barrel is open at the base, where a stop is installed to keep the rocket from falling out of the tube. The rocket is fired by a lanyard-operated percussion device, and, on firing, blast and flame flare out some five yards to the rear of the launcher.

According to the Japanese, the elevating mechanism of the gun gives angles of elevation from 18 degrees to 65 degrees, and the weapon is capable of firing at ranges from 1,000 yards minimum to a maximum of 2,000 yards. The gun is sighted with the same sight used on the standard Japanese 150-mm mortar, Model 96.

The barrel, which is 8 feet long, breaks down into two sections and a connecting piece. These, and the remaining components of the gun, may be packed on three horses for transport.

Because the Experimental 20-cm Rocket Gun apparently was developed by the Japanese Navy, it was not known whether or not the Japanese army would be equipped with the same weapon. However, it was reasonable to assume that, should production facilities permit, army troops armed with rockets would be equipped with tube rather than trough launchers. It is known that last year Japanese ordnance chiefs put 20-cm rockets—and a reported 24-cm rocket—on a list of important ordnance which is gradually being procured and issued in quantity. To date there is no report of U.S. troops having encountered the 24-cm rocket.

The evidence indicated, however, that the production of rocket launchers in quantity should not be difficult for the Japanese to achieve. Consequently, Intelligence officers concluded that as U.S. troops push into the inner defenses of the Japanese Empire, they should expect to see more of rocket warfare, Jap style.

This conclusion has since been justified. U.S. Marines landing on Iwo Jima have reported the first actual use of rockets by the Japanese.

ROCKETS ON IWO JIMA

As the *Intelligence Bulletin* goes to press, the combat on Iwo Jima still is in progress and reports on the Japanese use of rockets in this action are brief and inconclusive. It is apparent however that the enemy is using a large rocket projectile, conceivably the 44.7-cm rocket, as well as rockets of a smaller caliber. No information concerning the rocket launchers is at hand.

MORE NOTES ON

BOOBY TRAPS AND FIRING DEVICES

Recent campaigns in the Pacific and Asia have shown that the Japanese, when given the time, are not content to retreat without planting booby traps and other explosives to injure personnel and to destroy abandoned materiel.

Although the Japanese soldier has been taught to improvise to a great extent with hand grenades and dynamite when preparing his traps and demolitions, the Japanese Army has experimented with some mechanical devices which may be encountered by U.S. troops at any time.

MARK "I" LAND MINE

The Japanese are now reported to have developed an anti-personnel mine of the bouncing type similar to the German "S" mine. Known to the Japs as the Mark "I" Land Mine, it is designed to be buried close to the surface of the ground and fired by either a trip wire, or by remote control. It consists of a projectile, a propellant container with charge and a firing device.

The projectile consists of a 155-mm mortar shell with the fuze and fins removed, and the fuze replaced with a blasting cap and pull-type friction igniter. The propellant container resembles an artillery shell case and contains, beside the projectile,

a propelling charge of black powder in a cotton bag. There is also a small chain about 5 feet long, one end attached to the container, and the other attached to the projectile igniter. The propelling charge in the container also is fitted with a friction primer.

The mine is actuated when pressure on a trip wire detonates the container primer with its propelling charge. This explosion throws the projectile upward until the chain is fully extended. At that height the chain pulls the projectile igniter, exploding the shell. The effective bursting radius is reported to be approximately 70 yards.

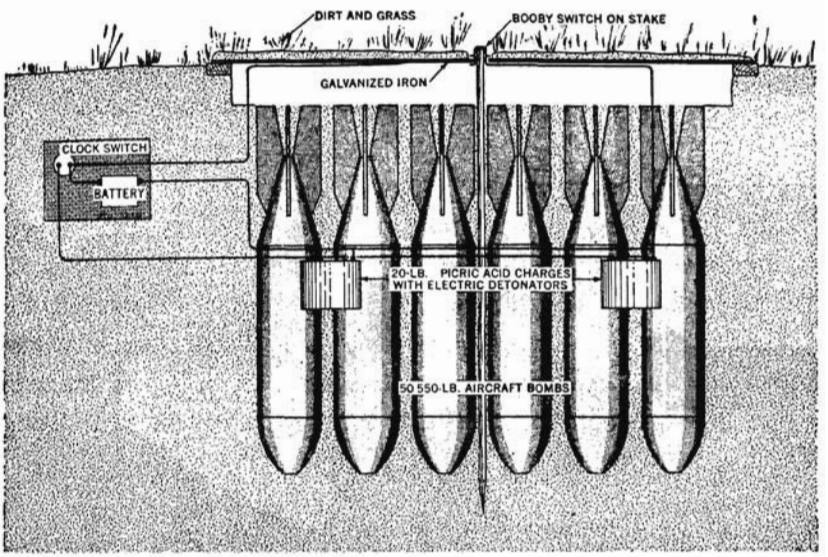
One observer has reported that a "bouncing type" anti-personnel mine was used on one occasion by the Japs in the Admiralty Islands; however, this report has not been confirmed, and there have been no other reports of bouncing mines being used by the Japanese in other areas.

SOAP BAR BOOBY TRAP

U.S. soldiers entering bivouac areas abandoned by the Japanese should beware of a novel explosive or incendiary charge known as the "soap bar" booby trap. Australian troops have reported finding a charge molded to represent a bar of Ivory soap, with the word "Ivory" embossed on one side, and "Procter and Gamble" on the other. A primer was located in a recess on one side of the charge. The means of igniting the charge has not been established, but it is likely that a pull-type friction igniter can be used.

DELAY MINE

Like the Germans, the Japanese have been known to leave delayed-action booby-trapped demolition mines in installations they have abandoned in retreat. One such mine of this type was found on an airfield in the Southwest Pacific.



Delay mine found set on a captured air strip in New Guinea.

The explosive charge for this mine consisted of fifty 550-pound aerial bombs set nose-down in a pit dug in the ground. The pit was covered by a galvanized iron sheet and was camouflaged with tufts of grass. Planted with the bombs were two separate booster charges of 20 pounds of explosive, each charge wired with two electric detonating caps.

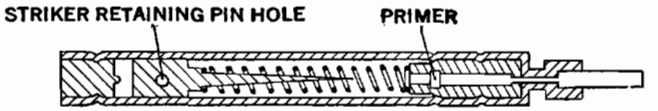
Fired electrically, this mine was capable of being detonated either by a clock delay mechanism, or by a booby switch. Wires were run from the detonating caps through a battery to the time clock and to the galvanized iron cover, which, when moved, would activate the booby switch. This switch consisted of a stick thrust through a hole in the plate. Exposed wires leading to the detonators were fixed to the stick 3 inches above and below the plate. If the iron plate were lifted or depressed, the wires would touch the plate and close the circuit. The clock switch, which could be set for any time up to 24 hours, would

otherwise close the circuit eventually and detonate the mine if the booby switch had not been actuated in the meantime. Both the clock and the battery were buried in tin containers.

BOOBY-TRAP IGNITERS

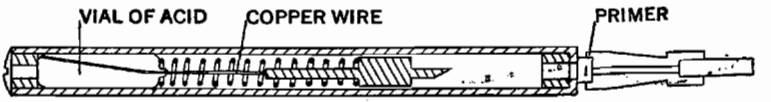
Most Jap booby traps thus far encountered by U.S. troops have been constructed with an ordinary hand grenade or friction-type fuze lighter to act as the igniter. However, the Japanese have also experimented with at least four machine-made igniters. Although there has been no reported instance where a Jap booby trap has been fitted with one of these firing devices, their use should be anticipated.

TYPE 1



A simple device, the Type 1 igniter consists of a striker held back from a primer by a retaining pin. A tension spring is attached to the striker and, when the retaining pin is drawn, pulls the striker down on the primer cap. When rigged with a charge as a booby trap, a trip wire is attached directly to the retaining pin.

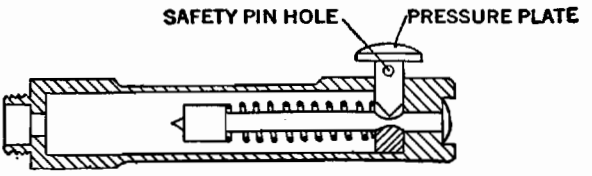
TYPE 2



The Type 2 is a time-delay igniter. A striker, under pressure from a compressed spring, is held back from a primer cap by a thin copper wire fastened from the striker to the opposite end of the igniter. A small glass vial of acid is located in the top of

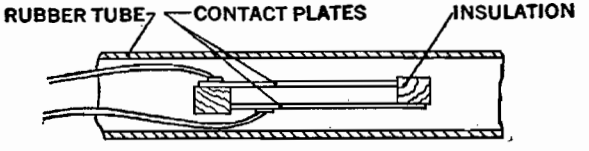
the igniter near the wire. When the vial is broken, the acid corrodes the wire and releases the spring-loaded striker. There appears to be no safety device with this igniter, and the actuating pressure is not known.

TYPE 3



The Type 3 is a pressure-type igniter consisting of primer cap and a spring-loaded striker, the base of which is anchored firmly to the igniter case. A chisel-like pressure shaft is set at right angles to the striker. Pressure on this shaft forces the chisel edge down on the striker near its base, cutting the striker free so that, under pressure of the spring, it is driven into the primer cap.

TYPE 4



An electric igniter, the Type 4 device is housed in a waterproof rubber tube of undetermined length. It consists chiefly of two parallel metal strips placed one over the other and held apart by blocks of insulating material fixed between the ends. Wires hooked to one end of each strip can be attached to a battery and an electric cap set in a demolition charge. Pressure on the rubber tube presses the strips together, thus closing the electric circuit and detonating the charge.

Some new and useful information about German minefield doctrine, as well as timely verification of trends recently reported from the Western Front, is provided by the latest enemy manual on minelaying and the preparation of minefield records. Outstanding data from the manual is presented in this article.

RECENT MINEFIELD DOCTRINE

There is nothing casual or slipshod about the German approach to the business of laying minefields. Each stage of the work is performed with characteristic thoroughness, and complete written records of various types are drawn up for every minefield that is laid. An exception is made only in the case of a minefield laid hastily on the surface of the ground in an area where constant supervision can be maintained, and when early removal is intended. There are four types of German minefield records: plans, sketches, reports, and maps. These documents can be extremely useful to Allied intelligence officers, and should be dispatched to them as quickly as possible.

1. Mine plans are descriptions and scale drawings of mine obstacles, containing all necessary details and locations.

2. Mine sketches are simplified mine plans not drawn to scale. These sketches are prepared while a field is being laid, or, if hostile fire or other adverse field conditions interefere, shortly after it has been completed.

3. Mine reports concern scattered mines in an area designated by an Army High Command. Such documents contain information regarding the general location, number, and types of mines used, as well as all necessary data about fuzes. However, no survey work is included.

4. Mine maps show the over-all picture of minefields laid in various sectors of the front, but do not contain detailed information. The maps are based on mine plans and mine reports, and are prepared by the Division Engineer.

German engineers are charged with the preparation of all minefield documents, and with keeping the troops fully informed regarding the mine situation. Mine documents are classified, of course, and it is forbidden to take them into the front lines or to give them to patrols. The German policy of supplying copies of mine documents to higher echelons makes it

possible for the originals to be destroyed readily if they are in danger of being captured. If a unit which has prepared documents is relieved, it turns over the papers to its successor.

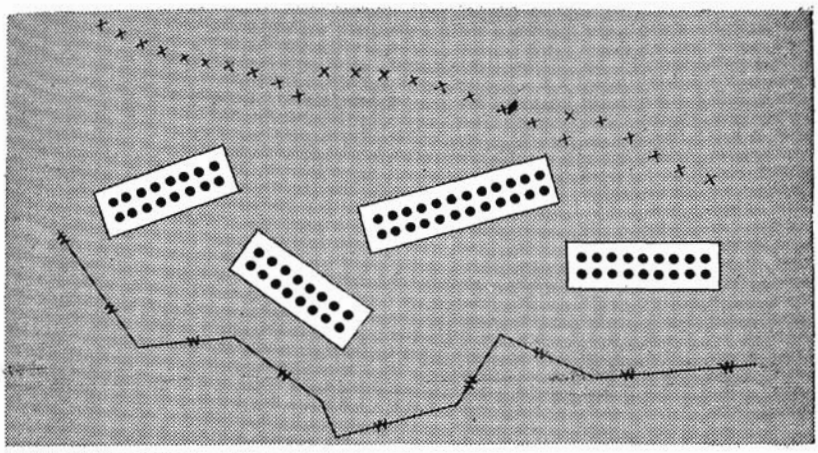
MINEFIELD MARKING

German use of minefields to cover defensive actions and withdrawals has been increasing steadily ever since the enemy went over to the defense in North Africa. In a static situation every minefield is regarded as an element of the frontline position, and is surveyed as such. When extensive minefields are prepared, they are laid according to an over-all plan which takes into consideration all weapons and their fields of fire. Mine reconnaissance and the marking and surveying of minefields still are performed exclusively by the engineers.

Mine obstacles can consist either of patterned minefields or of scattered mines, as shown in the illustration. However, it is now an enemy policy that permission must be obtained only from a very high echelon before mines can be laid at random and without any pattern at all.

Extensive fields of pressure-type mines may be subdivided into individual fields, sufficiently far apart to prevent sympathetic detonation. For example, a field of buried Tellermines may be staggered in this manner, with an interval of at least 60 feet between any two of the constituent fields.

German systems of minefield marking naturally are intended to enable friendly troops to identify the fields easily, and, at the same time, to keep a hostile force from discovering that mines are present in an area. Stakes, signs, or fences may be used—or all three—depending on the tactical situation and the terrain. Markings are checked and maintained or changed if they have become overgrown or if snowfalls, thaws, or heavy rains have made them at all indistinct. As a safeguard against



Constituent Fields Spaced to Prevent Sympathetic Detonation.

betraying the shape and size of the fields, the Germans stipulate that fences must not follow the outlines of minefields too exactly. Mine gaps sometimes are marked, especially for patrols and as one of the preliminaries to an assault. For permanent patrols, new gaps are made from time to time, and the old ones are closed. The Germans consider it expedient to start the marking of mine gaps at some distance from each edge of the field. Markings for patrols are maintained for a brief period only; those made as a preliminary to an assault are not prepared until just before the hour when the assault is to take place. All troops are required to be familiar with the various types of survey points, signs, and fences, and are ordered not only to avoid damaging them but to report when damage of any sort has been observed.

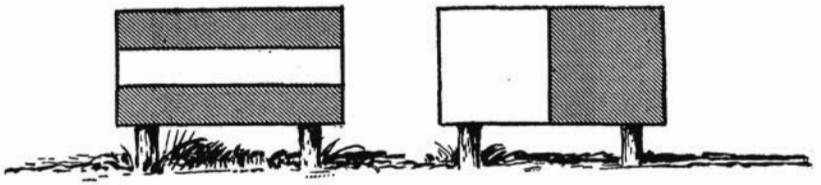
When German engineers prepare a minefield, they mark each corner with a post. After the minelaying has been completed, these posts are driven into the ground until they are almost level with the surface, and then are camouflaged. A mine-free safety strip is provided on the German side of the field.

In addition to trees and other natural reference points for minefield surveying, artificial fix points may be used. Wooden marking stakes are likely to be employed for this purpose. Sometimes stakes are tarred, and their heads reinforced with a metal band, to increase durability. The Germans recommend that all marking stakes for a division or corps area may be made beforehand, to ensure uniformity; it is pointed out that friendly troops will more readily recognize uniform marking stakes, will not remove them, and will find them helpful in crossing mined areas. The length of these stakes varies according to the terrain. The German Army orders that they be flattened on one side for a length of about 8 inches, and that the flat surface be painted red, with the letters "*Mi*" (denoting "*Minen*") in black. Additional data may be painted on the red surface, if necessary. It is explained that stakes marked in this manner should not be used on the hostile edges of minefields, lest they aid Allied troops in detecting the field.

Mine Stakes (red and black).

Signs for minefields are painted in red and white on boards or sheets of metal; about 1 foot high and 2 feet long, which are then fastened to two stakes. The edges of minefields are marked by signs with horizontal stripes. Edges of gaps through minefields are marked by signs divided vertically. The white half is on the side of the gap; the red half, indicating danger, is on the minefield side.

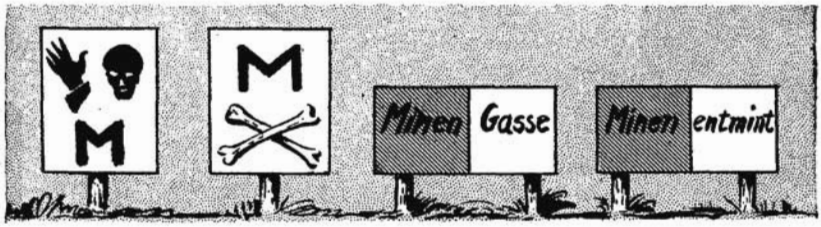
Signs of this size are used behind the main battle positions.



Signs (red and white) for Minefields.

In front of the main positions, smaller signs are used, and the unlettered reverse sides, facing Allied troops, are painted olive drab.

If red paint is not available for minefields signs, black-and-white signs of the following types may be used instead.

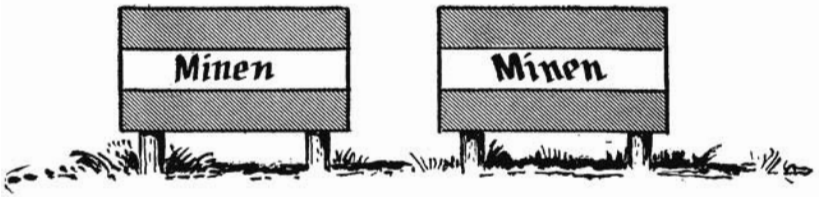


Minefield Markers (black and white).

"*Minen*" of course means "mines"; "*gasse*" or "*gassen*" indicate mine gaps; "*entmint*" indicates an area which has been cleared of mines.

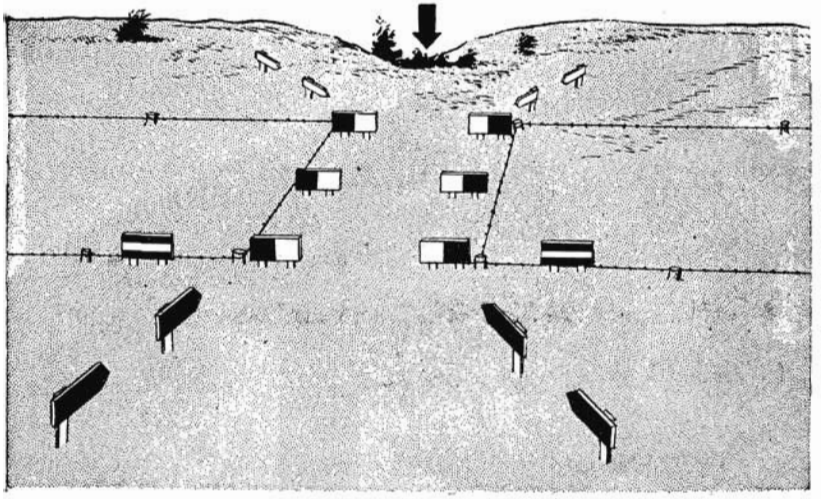
Signs indicating true minefields are marked with vertical lettering, but *signs indicating dummy minefields may be marked with slanting letters.* The Germans permit this distinction to be made known to engineer troops only, on the principle that other troops may betray the nature of the dummy minefields by moving across them.

When marking a gap through a minefield, the Germans mark a path extending some distance into the clear on each side of



True Minefield—Dummy Minefield.

the field, as shown in the illustration below. This is done to permit assaulting German troops to recognize the exact location of the minefield in ample time as they advance, and thus avoid lateral movement in the immediate vicinity of the field.



Markings for a Gap through a Minefield.

Minefields are surrounded by warning fences or wire obstacles. (The latter are very often employed in front of centers of resistance.) In the case of an ordinary warning fence, two strands of wire usually are strung between a series of fence posts; the upper strand is of plain wire, and the lower, of barbed wire. Also, barbed wire is wound around the fence posts. The

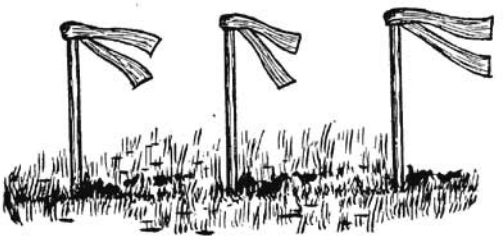
Germans try to make all warning fences uniform in a given sector, so that their troops will identify them readily.

Special Warning Fence.

USEFUL NOTES ON SURVEYING

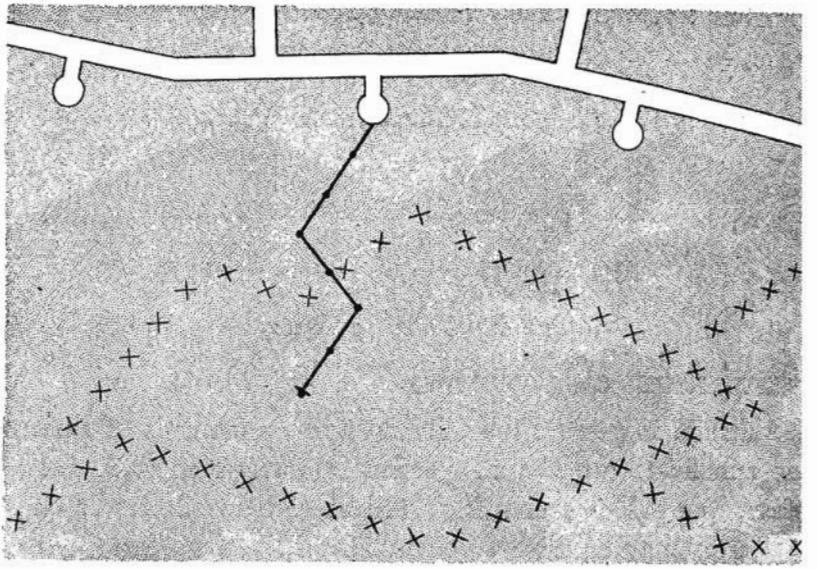
Although in general the German Army's methods of surveying minefields are not of particular interest to U.S. junior officers and enlisted men, it should be recognized that at times the enemy may be interrupted in the midst of performing this work and may be forced to abandon an area hastily, leaving behind certain evidence which may prove useful.

It is the enemy's policy to survey all minefields, and the individual mines within the fields, while the minelaying is being done. While this work is in progress, trip-wire obstacles often are marked with small flags, as illustrated. These flags are not removed until all the mines in the field have been laid and armed.



Mine Flags.

All reference points for minefield survey are chosen so that they can be found easily. In some instances the Germans find it necessary to use guide wires.



Minefield with Guide Wire.

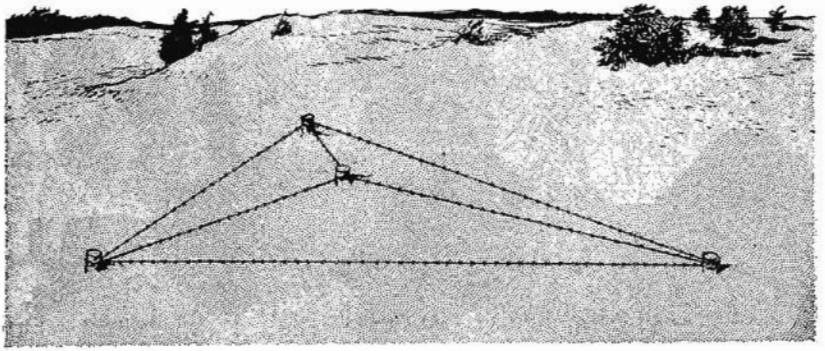
The Germans try to choose simple fix points wherever possible —a grade crossing, for example, or the intersection of two roads at the end of a village.

The accuracy of the minefield survey depends on the time available and on the tactical situation. Minefields in front of, or in the immediate vicinity of, a main defense area are surveyed with complete accuracy, to safeguard friendly troops. If a German withdrawal is imminent, a higher command echelon may rule that rough sketches will be sufficient.

When minefields are prepared in the immediate vicinity of a main defense area, the Germans are likely to use trenches, road forks, or pillboxes as reference points. Survey points are established near these reference points.

Surveying always proceeds from the German side toward the Allied side. Here is a type of survey point (*VP*) that the Germans have found satisfactory. The fix point itself is estab-

lished in the center of an equilateral triangle with sides 15 to 25 feet long. The corner points and the fix point are stakes, rails, or concrete posts about 3 feet long, which are connected with barbed wire after they have been driven into the ground.



Artificial Survey Point.

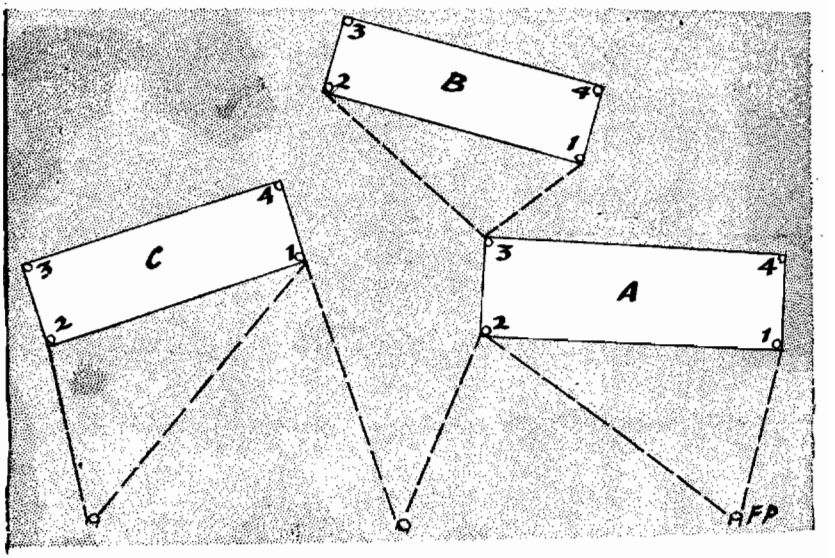
The Germans contend that, since even heavy shelling will hardly ever destroy more than one or two stakes, such a survey point can be reestablished easily.

Signs are used to make it easier for troops to locate corner, survey, and fix points. The Germans often consider it advisable to mark certain points by posts pointing toward them in line of sight. These posts are placed 60 feet apart, and are prepared with one, two, or more grooves—the number increasing with the distance from the minefield. Thus, even if a stake is destroyed,

Guides to Corner, Survey, and Fix Points.

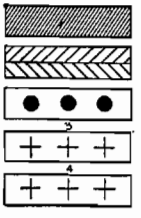
German troops still can find the minefield without too much difficulty.

Minefields arranged in echelons are surveyed by using corner posts on the Allied side of intermediate minefields as survey points.



Corner Posts for Minefield Surveying.

Conventional Signs For Mine Maps Forwarded to High Echelons



Terrain impassable for tanks

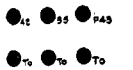
Antitank ditch or obstacle

Antitank minefield

3 } 3 and 4 antipersonnel mines

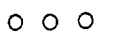
4 } per meter width of front

Conventional Signs For Mine Plans and Sketches Used By Troops


Tellermines (index numbers used only if different types of Tellermines are laid in the same field)

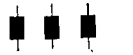

Topfmines


Riegelmines


Improvised antitank mines

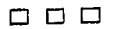

S-mines


Concrete stake mines


Schümines 42


Improvised antipersonnel mines


Small hidden charges


Large hidden charges

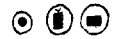

Observation mines

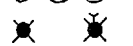
Booby-trapped mines

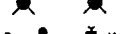

Mines lifted or destroyed


Scattered mines


Deliberate minefield

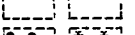

Mines lying on the surface


Mines below the surface

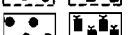

Minefield cleared or destroyed

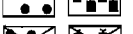

Gaps through minefields

Dummy minefields


Built-in hidden charges in buildings


Survey point (*VP*) and fix points (*FP*)


Warning fences


Direction of Allied attack

Behelf	*Beh.*	Improvised mine
Blind	—	Unarmed
Bohrpatrone	*Bhr. Ptr.*	Demolition cartridge
Brennzünder	*Bz.*	Friction fuze
Brettstückmine	—	Plank mine
Chemischer Zünder	*Chem. Z.*	Chemical fuze
Doppelzünder	*Dopp. Z.*	Double fuze
Druck	—	Pressure
Druckbrettmine	—	Tread mine
Druckzünder	*D.Z.*	Push fuze
Eismine	*Eis. or Es.*	Ice mine
Entlastungzünder	*E.Z.*	Pressure release
Flasche	*Fl.*	Bottle
Fusschlingemine	—	Snare mine
Geballte Ladung	—	Compact charge
Geschossmine	—	Shell mine
Glas	—	Glass
Glühzünder	—	Electric detonator
Hebel	—	Lever
Holzmine	*H.*	Wooden mine
Kasten	—	Box
Kipp	*Ki.*	Tilt
Knallzündschnur	—	Detonator fuze
Knick	—	Snap
Ladung	—	Charge
Leicht	*l.*	Light
Mine	*Mi.*	Mine
Panzermine	*Pz.*	Antitank Mine
Papp	—	Cardboard
Pilz	—	Mushroom
Riegel	*R.*	Bar
Schlag	—	Impact

Schupo	—	Policeman
Schümine	—	Antipersonnel mine
Schützen	—	Infantry
Schützenmine	*S.*	Antipersonnel mine
Scharf	—	Armed
Schnell	—	Quick
Schwer	*s.*	Heavy
Sicher	—	Safe
Sprengbüchse	—	Slab charge
Sprengkapsel	—	Detonator
Sprengkörper	—	Small charge
Sprungmine	—	Jumping mine
Stab	—	Rod
Stock	—	Picket, stake
Stolperdrahtmine	—	Trip-wire mine
Stück	—	Piece, part
Teller	*T.*	Plate
Topf	*T.*	Saucepan
Verzögerung	—	Delay
Zeit	*Zt.*	Time
Zeitzündschnur	—	Safety fuse
Zug	*Z.*	Pull
Zugdruckzünder	*Z.D.Z.*	Push-pull fuze
Zug-und Zerschneide-zünder	*Z. u Z.Z.*	Pull and tension release fuze
Zugzünder	*Z.Z.*	Pull fuze
Zünder	*Z.*	Fuze[1]
Zündschnuranzünder	*Zdschn. Anz.*	Safety fuse lighter
Zwischenstück	—	Adaptor

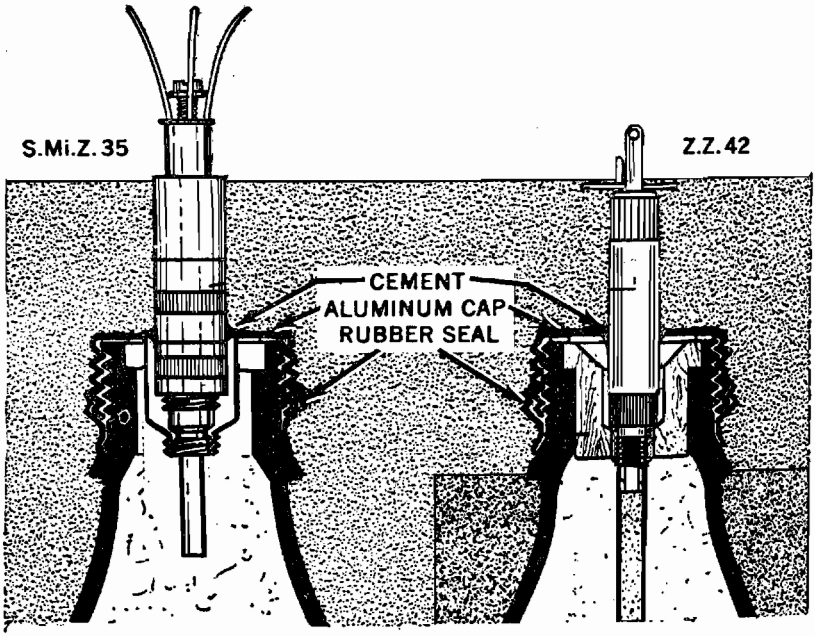
[1] In British terminology: "igniter."

THE EISMINE

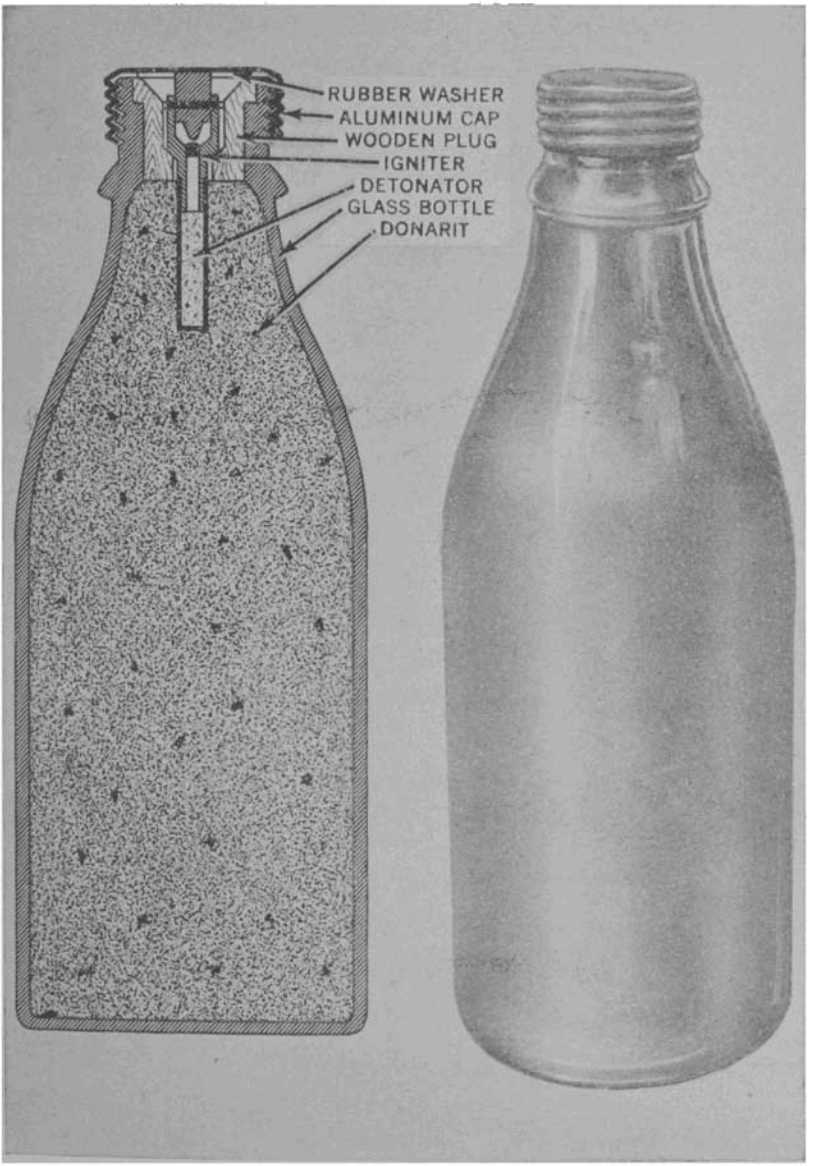
OTHER MINE DEVELOPMENTS

THE EISMINE

Originally designed for suspension under ice, to serve as a water obstacle, the German *Eismine* ("ice mine") now has made its appearance as an antipersonnel land mine. The *Eismine,* which resembles a quart milk bottle, is filled with *Donarit,* a German explosive much like dynamite. Instead of being equipped with its own special fuze, as originally intended, the *Eismine* recently has been employed with such fuzes as the



The *Eismine* is now being laid as an antipersonnel land mine.



The German *Eismine*.

S.Mi.Z. 35 and the *Z.Z. 42*. When used with the *S.Mi.Z. 35*, the *Eismine* is laid under the surface of the ground, with only the

three prongs of the fuze exposed. Or it is cast in a concrete block, and then laid in the same manner. When an *Eismine* is used with a *Z.Z. 42* fuze, the fuze is attached to a pressure board.

Personnel authorized to neutralize the *Eismine* may do so by unscrewing the aluminum cap and the igniter and by removing the detonator.

THE PANZERFAUST AS A FLYING MINE

Recently the *Panzerfaust* has been found rigged up as a dangerous trip-wire trap to operate against both armored and unarmored vehicles. The German name for such an arrangement is *Panzerfaust als automatische Sperre* (the *Panzerfaust* as an automatic obstacle.)

The tube of the *Panzerfaust* is secured to a fence, or to stakes driven into the ground, and is sighted in the desired manner. From the firing mechanism of the weapon, a trip wire then is led across the path of the prospective target, and is anchored

The Germans rig the *Panzerfaust* in this manner, to serve as an antitank booby trap.

on the other side of the road. It is reported that the trip wire usually is found suspended 2 feet above the surface of the road and that it can easily be seen in the daytime.

German instructions covering this new use for the *Panzerfaust* point out that a larger zone can be blocked effectively by such "automatic obstacles" than by a considerable number of Tellermines, and that every unit carries *Panzerfaust* weapons while Tellermines are available only to the engineers—and in limited quantities, at that.

On the Western Front, Allied troops have encountered traps prepared only with the *Panzerfaust 30*, which requires modification of the sights. However, it should be noted than the *Panzerfaust 60*, with its simplified trigger mechanism, could be used virtually without alteration.

MINING AND STRENGTHENING OF ABATIS

Recently the Commander-in-Chief of German forces in the West issued an order regarding the future improvement of abatis, to counter Allied use of armored vehicles with circular saws to clear such obstacles. The order describes how the vehicles "approach the obstacle with elevated saw blade, bring down the blade, cut the first few trees, and push them aside with the blade in the elevated position; this procedure is repeated until a lane has been cleared." As a countermeasure, the Germans have been ordered to take the following precautions in preparing abatis:

Abatis—especially those immediately behind the forward defense areas—will be prepared with an increased number of hidden charges, antitank mines, and observation mines (to be fired by remote control), in the front, rear, and sides of each obstacle. Hoop iron, clamping hooks, wire, and other materials which will interfere with the saw device are to be built into the first few trees on both the Allied and German sides of each

abatis, and especially at those points where an Allied force may be expected to use the new device. In the case of abatis under German infantry observation, an additional number of armor-piercing weapons and close-combat antitank weapons will be provided.

TRUE AND DUMMY BOOBY TRAPS IN ROADS

In a number of instances, investigation of disturbances in road surfaces—which so often indicates the presence of land mines—has resulted merely in the discovery of a series of bricks wired together. Sometimes, however, the bricks have been booby-trapped—either to an armed mine nearby or to a *Schumine* buried underneath one of the bricks. Also, *Topfminen* have been found with *Schuminen* beneath them. Recently the *Topfmine* has been found booby-trapped with a *Z.Z. 42* fuze in the glass cap and with a wire leading to a spike driven into the ground.

The German practice of varying true and dummy booby traps in roads no doubt is motivated by two factors, temporary supply shortages in certain sectors, and the enemy's desire to slow down Allied troops by forcing them to examine carefully each suspected instance of road mining.

TELLERMINES EMBEDDED IN CONCRETE

Tellermines (*43*) have been found embedded in concrete blocks, about 15 inches square and 4 inches thick. Tar paper covers the pressure plate, allowing an air space between the concrete and the top of the mine. The enemy may make increased use of Tellermines treated in this manner, since the method has the following advantages:

1. The mine is waterproofed around the pressure plate, where moisture is most likely to enter.
2. Blending into roads, bridges, and so on is made easier.

3. The tamping factor is increased. (The detonation of one of these mines formed a crater about 4 feet wide and 3 feet deep in ordinary field soil.)

4. The shrapnel effect is increased. (Pieces of steel casing and sizeable chunks of concrete are hurled as far as 250 yards.)

The Corps of Engineers recommends that Tellermines embedded in concrete be destroyed in place. Although booby-trapping has not been encountered, it is pointed out that neutralizing the mine would be very difficult because of the added weight of the concrete cast.

PATROLLING

FROM STATIC POSITIONS

The Germans believe that troops systemically trained for patrol work, and who are obliged to occupy static positions, may profitably be employed in difficult attack missions.

On the nights of 28 and 30 December 1944, patrols sent out by a German parachute battalion in Italy achieved results that the enemy considered significant, not only as far as actual gains were concerned, but as pointing up the effectiveness of the combat patrol methods that were employed. Both patrols, an enemy report explains, resulted in a substantial improvement of the main line of resistance, the course of which originally had been dictated by the Allied forces. Such improvement was necessary if the Germans were to secure a dominating terrain feature, Montecalderaro,[1] and thus enable themselves to establish observation posts and positions in depth on three tactically important hills in the vicinity.

The German report offers its readers a number of lessons based on the activity of these two patrols. This is what the enemy has to say about his own reconnaissance. "In close country it is advisable to carry out reconnaissance with preliminary patrols, which for hours on end lie hidden near the Allied posi-

[1] The spelling of this name has varied on maps and in reports.

tions and make detailed observations as to the enemy's weapons, positions, and general activity, and later conduct the combat patrol at night to its starting point. It is advisable for the leader of the combat patrol to take part in this reconnaissance himself."

Preliminary reconnaissance before the first patrol operation revealed that the Allied force was "not very alert." This seemed to promise success for a surprise attack. The report remarks that when combat patrols are preceded by preparatory fire, there is always the danger that Allied soldiers will anticipate the German intentions and will start laying down artillery fire before the German attack begins. Therefore, when Allied security is believed to be slipshod, and when the opportunities for approach are good, the Germans prefer to attempt a surprise attack.

"By adopting this procedure," the report states, "it was possible to surprise the enemy completely on Montecalderaro, and to get our own troops into close combat very quickly. The enemy again was shown to be inferior in close combat. If a surprise attack does not succeed, as was the case in a combat-patrol assault against another objective in the same area, the operation must not be broken off, but must be resumed after suitable fire preparation. This procedure was followed in a second attack against the other objective, and a complete success was scored. In an assault like this, however, it is necessary to range the heavy infantry weapons and artillery on the objective inconspicuously in advance, and thus be able to concentrate fire on demand against such centers of resistance."

The early hours of the evening have proved suitable for operations such as these, the report continues, inasmuch as bright moonlight makes it more difficult for troops to approach the point of departure for the final assault.

The Germans recognize that an Allied force, after losing part of a position, may concentrate artillery and mortar fire on the

lost portion and then attempt a counterattack to recapture it. To keep German losses from such fire as low as possible, and to defend a newly won position successfully, the following measures are recommended in the enemy report:

1. In choosing personnel for combat patrols, to select "stickers" who will hold out determinedly under the heaviest fire.

2. To hold reserves ready, and send them forward at an appropriate time to reinforce the patrol for the defense.

3. To send forward entrenching equipment and ammunition as soon as possible.

4. To send forward engineers, if they are available, to improve the positions.

5. To send forward observers from the heavy infantry weapons and artillery.

It was because these measures were faithfully carried out at Montecalderaro, the Germans say, and because of the "extraordinarily effective" cooperation of a supporting artillery battery and the heavy infantry weapons, that the ground gained was defended successfully against an Allied counterattack in the strength of about two companies.

The Germans believe that a number of important points came to light during the cooperation with the artillery and heavy infantry weapons:

1. The battalion commander who was in charge of the patrol operations had with him a liaison officer from the artillery battery, who was able to inform the battery, without delay, about the parachutists' requirements. The commander of the machine-gun company also was at battalion headquarters. As a result, close cooperation between infantry, artillery, and heavy infantry weapons was possible from the start.

2. Throughout the operations German artillery and heavy weapons kept delivering heavy harassing fire on what were sus-

pected to be the positions of Allied heavy weapons and on the approach routes of Allied reserves. Because of this, the Germans say, the Allied countermeasures could not be undertaken until late in the battle.

3. Before the fighting began, German artillery had ranged on the area just beyond positions that the Germans hoped to secure and hold. It was therefore possible to call for defensive fire on the subsequent counterattacks, and to get it quickly (within 3 minutes).

4. The value of coordinated direct and indirect fire proved itself again, the Germans say. They maintain that Allied losses on this account were very high. Acting on their own initiative, German heavy machine gunners coordinated their fire with that of the artillery.

5. The cooperation with artillery and the fire control of all the heavy weapons was ensured by an efficient communications layout. The Germans found it profitable to use tactical communication lines, when these were not required by the commanders, as an additional means of controlling fire.

Invariably the Allied positions were stormed to the accompaniment of loud shouting and cheering. The Germans state that this procedure, together with the firing of light infantry weapons while on the move, had a visible effect on Allied personnel. The Allied force is described as offering short and sharp resistance, but fleeing when it came to close combat. In one locality bitter hand-to-hand fighting is said to have taken place around a house in which some Allied troops, including a company commander, had dug themselves in. The Germans remark that the occupants surrendered only after they all had been wounded.

The use of Ofenrohrs and Panzerfausts in attacks against strongpoints and houses was "extraordinarily effective", according to the German report, which goes on to say, "The penetrat-

ing effect of their projectiles on walls and sandbags is such that the enemy's defense is manifestly impaired. In one instance, for example, a house occupied by the enemy was set on fire and the occupants surrendered."

It is pointed out that after each of the German combat-patrol operations, the Allied force tried to recapture the lost positions by counterattacking on the succeeding nights, after preparatory fire. The Germans observe that "exemplary support" by the artillery battery was responsible for repelling these counter-attacks, and that only twice did the fighting reach the close-combat stage. From this the enemy derives the lesson that, as soon as Allied forward positions have been captured, artillery fire should be ranged immediately on the areas just ahead of these positions, and that ample supplies of ammunition should be held in readiness, to halt the anticipated Allied counter-attack.

The enemy report concludes that combat patrolling of this type raises the morale of the troops involved, and leads to greatly improved cooperation all around.

Discovered in Combat—II

Not only is the *Intelligence Bulletin* designed primarily for junior officers and enlisted men, but it repeatedly has been indebted to them for a great deal of useful information about the enemy. In rest areas, base hospitals, ports of embarkation, and many other installations, men fresh from combat supply two important types of intelligence regarding the enemy's small-unit tactics, weapons, and other materiel. The first type consists of information which has not yet been reported by any other source, and which may or may not provide an accurate indication of future enemy methods. In any event, the Military Intelligence Service keeps a careful check on data of this sort. The second type is corroborative information, which verifies and perhaps amplifies earlier reports. Material of the latter type often is worth circulating throughout the Army. Even an isolated experience may be significant, however, if it reveals a really notable development in the enemy's war production or in his battle technique.

Here are some further intelligence notes which should prove helpful to readers in the field.

X MARKS THE SPOT

"In France the Germans frequently painted 6-inch yellow crosses on tree trunks. When viewed through binoculars, these crosses were easily visible at a distance of 700 yards. We discovered that the yellow markings were used as zero points for the German 88s, and thereafter took care to give any such potential target a wide berth."

VULNERABLE STRONGPOINTS

"In December my company was near Harlange, in Luxembourg, One night I sent out reconnaissance patrols of four and five men. They brought back information that the Germans had established four strongpoints in front of my company's position. These strongpoints were about a quarter of a mile apart, and each contained 40 to 60 Germans. There were no German soldiers between the points. Each point was equipped with six or seven machine guns, and with machine pistols, rifles, and bazookas; in addition, a couple of the points had 60-mm mortars. Patrol members reported that the Germans had posted only two sentries, one at each end of the strongpoint series. Upon receiving this information, I assigned one platoon to attack each strongpoint. During the night these platoons crossed 550 yards of open ground to reach the strongpoints. They crept within close handgrenade range, and waited for dawn. As soon as there was light enough to see by, each platoon attacked the German position with hand grenades. One point was completely destroyed. In another, only three of the enemy survived. The Germans in the other two points fled, and I regret to say that a number of them succeeded in escaping. The important thing,

it seems to me, is that this entire action was possible because the Germans had been lax in posting adequate security.

"Earlier, the Germans themselves had used similar tactics against another company to the right of my own, and had inflicted severe casualties on our men. In this action the Germans used flashlights to locate our men in foxholes."

BOTTLE MINES

"The Germans in France improvised 'bottle mines.' Usually these were made of large wine bottles. The German soldiers filled the lower half with earth, and the upper half with a yellow crystalline explosive mixed with bits of copper wire, nails, fragments of tin, and so on. Then they corked the bottle with a *Z.Z.42* fuze, and laid the contraption as an antipersonnel mine with a trip wire."

"The Schmeisser machine pistol . . . was used extensively by German snipers who placed themselves 3 or 4 miles outside town and villages, along roads leading to these communities."

SNIPING AT LEADING ELEMENTS

"We found that the Germans usually tried to pin down our leading elements by directing fire from machine pistols and other small weapons against their front and machine-gun fire against their rear. The Schmeisser machine pistol has a high cyclic rate of fire, but is by no means accurate. It was used extensively by German snipers who placed themselves 3 or 4 miles outside towns or villages, along the roads leading to these communities. The snipers would cut in on the leading element of a company or battalion in order to hold it back. They would fire until they were out of ammunition, and then would jump out of their trees and come running toward our lines, shouting '*Kamerad*!' Each sniper wore a specially camouflaged uniform, and also had camouflaged his weapon by painting it and tying leaves to it so that it would blend with the surrounding foliage. An important mission of German snipers was to delay the ad-

"An 88-mm gun had been emplaced in each house, with the muzzle behind an open window in the front wall."

vance of our columns into populated places. This was why they fired on our leading elements, instead of holding their fire and trying to engage a larger force."

MASKING THE 88

"About 40 miles north of Florence, my outfit captured two German 88-mm guns. We had observed one of these guns firing, before we captured it. The guns had been spaced about 1 mile apart, and had been hidden with the enemy's customary care. The rear walls of two houses had been removed, and the inner side of the front walls had been reinforced with cement, making the total thickness of each front wall about 5 feet. An 88-mm gun had been emplaced in each house, with the muzzle behind an open window in the front wall. As a result, the guns were well hidden, and the houses served as smoke shields."

SUICIDE PATROLS

"Recently the enemy has been sending out suicide patrols, each consisting of about six men armed with machine guns. The mission of these suicide patrols has been to infiltrate our lines and do as much damage as possible. We generally succeed in wiping out such patrols on contact, but they can be something of a nuisance, even so. One good thing about it is that when you liquidate a suicide patrol, you feel that you're getting rid of Nazis of the most fanatical type."

TACTICAL SHIFTING OF ANTITANK GUNS

"One of the favorite tactical measures that the Germans employed in Normandy involved the shifting around of their antitank guns at night. All their antitank guns were mobile, and at

night the Germans sometimes moved them to positions around the perimeter of an area occupied by U.S. tanks. At the break of dawn, the Germans would lay down a smoke screen to cover their positions, and then would open fire on the U.S. tanks within the perimeter. A favorite position for the German antitank gun was at a 'crossrow,' where hedgerows intersected at right angles. Before a U.S. force advanced, the German antitank gunners would draw a bead on a particular object in the distance—a tree or a signpost, for example. Later, when a tank or any other vehicle came near that object, the German guns could open up and have the range correct with the first round. German marksmanship with artillery pieces and antitank guns was excellent, although their marksmanship with small arms was inferior to ours."

DEFENSE AGAINST PATROLS

"When the patrol had advanced about 50 yards beyond the machine-gun nests, the Germans would open up with everything they had."

"German machine-gun nests frequently would detect our 10-men night patrols approaching, but would refrain from

opening fire. Instead, the Germans would let the U.S. soldiers sift past them. When the patrol had advanced about 50 yards beyond the machine-gun nests, the Germans would open up with everything they had. Our men of course were not only confused by this unexpected fire from their rear, but suffered casualties. They learned to conduct even more extensive observation by daylight, in an effort to detect every possible point which might harbor a machine-gun nest."

ARTILLERY SIGNAL

Although the Germans have not been reported as making wide use of the following trick, it seems worth mentioning, if only because variations of it may possibly be encountered in the future.

"While the First Army was chasing. the Germans across France, our outfit arrived at a small town after dark. This town had been evacuated by the Germans just a few hours before. They had been forced to abandon a number of motor vehicles, and the headlights on one of these vehicles had been left burning. When one of our men turned off the headlights, so as not to disclose any of our activity, the Germans began directing artillery barrages on us. It was clear that the artillery had been zeroed in on the area where the vehicles were, and that by extinguishing the headlights we had fallen in with an enemy plan and had indicated our arrival in the town."

WHAT THE GERMANS LEARNED

AT WARSAW

The Germans gained so much experience in street fighting while suppressing the first general uprising of armed Polish forces in Warsaw that the official German "Notes for Panzer Troops" takes cognizance of the lessons learned during these operations. Employing the popular German Army training method of listing incorrect and correct procedures in parallel columns, "Notes for Panzer Troops" sets forth a number of German errors in the Warsaw fighting, and supplies official comment on the methods which should have been employed in each case.

The observations in the "right" column take on an added significance, in view of a statement by the Inspector General of Panzer Troops to the effect that the underlying principles must be applied in *all* street fighting.

WRONG	RIGHT
A large number of heavy support weapons (assault guns, heavy howitzers, assault howitzers, self-propelled antitank guns, and infantry heavy weapons) were used in an uncoordinated fashion, with a consequent lack of effect. The fire of the support weapons was not used for immediate pushing forward.	1. All available support weapons, including artillery and aircraft, are concentrated on approved targets. During the concentration the infantry prepares to attack as soon as the last shell has fallen. Armored vehicles accompanying the infantry, to keep down any hostile soldiers who are still alive and who try to reappear.

WRONG	RIGHT
Our troops mainly used streets. (In street fighting the enemy can take advantage of innumerable hiding places. Absence of visible enemy therefore by no means implies actual absence of enemy.)	2. Walls of adjoining houses are blasted, and troops move forward through the houses. Mopping-up parties of infantry follow. (Making such covered approaches facilitates evacuation of wounded and supply of ammunition and rations.)
Houses or blocks were not consolidated immediately after capture. Infantry lingered around the entrances, doing nothing.	3. As soon as a building has been taken, it is consolidated; windows and other openings are turned into firing ports. Since underground passages and sewers provide the enemy with cover and means of communication, the entrances to cellars, stairs, and so on are to be given special attention. If subterranean passages cannot be mopped up immediately, the entrances must be barricaded, or blown in and guarded. Troops will not stand around idly.
Completely ruined houses were regarded as being no longer of use to the enemy. (It was found, however, that the enemy made considerable use of completely destroyed buildings.)	4. Even the most completely ruined houses must be occupied or covered by fire. Roving patrols are detailed to deny access to them and to ferret out any hostile stragglers who may have occupied them.
Many of the houses that we occupied had been almost completely destroyed by our own fire, thus	5. As far as possible, random destruction of potential cover can be prevented by strict

WRONG	RIGHT
denying our attacking troops positions and cover.	discipline. Only outbuildings affording the enemy covered approach to vital points should be destroyed.
Armored vehicles were used to knock down barricades and walls, to push aside abandoned vehicles and guns, and to perform other tasks for which they are not suited.	6. The fire power of the armored vehicles must be conserved by all means. In street fighting they are very much exposed to close-range antitank weapons. This makes them fundamentally unsuited for "bulldozer" tasks. The accompanying infantry therefore protects them against surprise attack of any kind. When attacking barricades and obstacles, the infantry approaches first and forces a passage through the obstacles. Squads of civilians later are put to work to complete the clearing of debris.
Our troops failed to make sufficient use of their rifles. The enemy was not sufficiently harassed.	7. Rifle and machine-gun fire must be delivered promptly and steadily from all newly captured buildings. Rifle fire is concentrated on group targets to keep the enemy's heads down. The enemy is not given a moment's rest, but feels himself perpetually observed and engaged. Rapid opening of fire is especially important, to avoid giving the enemy time to withdraw to alternate positions.

WRONG	RIGHT
The supposedly non-combatant and "harmless" population was not kept under observation, and seldom was employed to clear debris.	8. All able-bodied civilians are employed to clear debris. The German Army must enforce this point relentlessly, even when the work is performed under fire. (In this case the whole population was more or less directly assisting the insurgent Polish troops.)
Sufficient cunning was not employed to counter the enemy's tactics.	9. Tricks must be employed to draw fire and silence it. Our methods must change constantly; feints and other tricks and imaginative tactics must be devised.
The liaison between the various assault detachments was generally too loose, and signal communications were inadequately used. Radio and telephone conversations were practically always in the clear.	10. Assault detachments are instructed in methods of cooperation, use of fire, and movement. Cooperation will be improved if the assault detachments are kept constantly in the picture and if they report regularly on their position and intentions.

The Inspector General of Panzer Troops adds a final comment of his own. He says, "When tanks are used in street fighting, they should be employed like the so-called 'tank-infantry teams' used in Normandy—that is, small infantry units will be detailed to cooperate directly with tanks. The tougher the fighting, the greater our casualties will be if the following principles are not observed: (1) no splitting of forces, (2) thorough and purposeful concentration of fire, (3) immediate infantry exploitation of tank fire and (4) the closest mutual support throughout each action.

IN BRIEF

ASSAULT-UNIT (STOSSTRUPP) TACTICS

The principle of active defense has been the key to German tactics on the Western Front. An important aspect of this principle is well illustrated by a memorandum on assault-unit (*Stosstrupp*) tactics, issued early in 1945 by the German High Command.

The purpose of assault-unit operations is to place an Allied force on the defensive, if only temporarily, and during this period to subject it to losses of men and materiel which must be compensated for at the expense of its attacking units. Moreover, the High Command observes, such operations raise the morale of troops and increase their confidence in their "unquestioned superiority over the enemy."

Using information obtained from reconnaissance, from captured maps, weapons, and other materiel, and—if possible—from Allied prisoners, German intelligence informs the commander of an assault unit about the intentions, strength, organization, composition, and fighting quality of the opposition.

Basically, two types of missions are prescribed for assault units: destruction of specially selected Allied positions and the

personnel occupying them, and destruction of Allied units which have penetrated German defensive positions. However, it is pointed out that there always are opportunities for assault-unit operations. In each instance, careful consideration is given to the question of whether the expected success is worth the commitment of trained assault troops. "Weak points in the enemy front always can be found, and these *must* be exploited for assault-unit operations," declares the High Command.

In laying down certain basic guiding principles for assault-unit operations, the High Command orders that qualified men be organized into assault-unit detachments (*Stosstruppabteilungen*) and be trained in the light of past experiences. No standard organization is prescribed, but it is mentioned that each detachment should contain a balanced complement of infantrymen, engineers, scouts, signal personnel, and medical personnel. (litter bearers are included, not only to take back the dead and wounded, but to carry captured equipment.) It is pointed out that heavy infantry weapons may cooperate to advantage, as may artillery. The following equipment is suggested: trench knives, sharp spades, hand grenades, pistols with extra magazines, machine pistols (the clips containing 24 rounds only), Very pistols (for dazzling and confusing the opposition) charges to be used in demolishing pillboxes, Tellermines, pole charges, Molotov cocktails, smoke grenades to be used in routing Allied soldiers out of fortifications, and ashes or scraps of paper for marking paths. Raiding parties are made up of as many assault-unit detachments as may be necessary. ("Possibly several," the High Command says, vaguely.) However, the Germans emphasize that the mission of such a party must not be too ambitious. "Opportunities that arise in the course of the venture may be exploited to a limited extent by the assault-unit commander," concedes the High Command. Then follows this very significant observation: "Feints launched at the time of

the main breakthrough distract the enemy and cause him to take wrong countermeasures."

Before assault-unit operations, Allied positions are constantly observed and continually reconnoitered.

In deciding upon a mission, the Germans not only take into account the Allied strength and armament in individual sectors, but are strongly influenced by what German intelligence has reported regarding the state of Allied morale in the various sectors. Terrain estimates are studied carefully. Finally, a decision is reached as to whether the assault unit will make a sudden attack, purely infantry in character, based on surprise, speed, and the exploitation of darkness or fog; or whether the unit will try to penetrate Allied positions with the assistance of heavy weapons. The choice between the latter two types determines the tactics and timing of the operation.

An infantry assault based on surprise, and not employing artillery support, is regarded as the most practical way to capture prisoners. The High Command remarks that Allied guards frequently are caught sleeping, "because they believe that the Germans avoid night ventures." The first few hours after midnight are recommended as the best for an assault of this type. When Allied forces are alert because of actions on preceding nights, a different time should be chosen for the attack, the Germans add.

On the other hand, the Germans point out, when an assault unit has the mission of penetrating Allied positions, and destroying the positions and their occupants, the cooperation of heavy weapons generally will be needed. An undertaking of this sort usually takes place during the daytime, and the late afternoon hours are regarded as the most favorable. As soon as the objective has been decided upon, detailed reconnaissance is carried out and constant observation is maintained. This work is performed by members of the raiding party themselves,

so that they may learn as much as possible about the opposing Allied force, its positions, and the terrain. In all communications the operation is identified by a code name, the day is called "X", and the hour, "Y".

"THE GERMANS COUNTERATTACKED"

U. S. troops who have fought the German enemy have learned that the German defensive doctrine is built chiefly upon the counterattack. This principle of active defense at times has reached the scale of a counteroffensive; however, it is best illustrated in the persistent local counterattacks staged so often by units deployed on a regimental, battalion, or company front.

Two examples of what might be expected from an aggressive defender occurred late last year when U. S. troops were attacking the Siegfried Line near Aachen.

A U. S. division, engaged in breaking through the fortified area, sustained a German counterattack launched by two battalions of infantry, seven tanks, and from 15 to 20 assault guns. The counterattack fell upon the division's left flank, and came shortly after the morning fog had lifted. There was no heavy artillery preparation, and the Germans hit the most vulnerable spot at their most opportune time. The German infantry was stopped by U. S. artillery and infantry action before the counterattack objective—a village in rear of the American line —was reached. However, some tanks and assault guns did get into the village and caused some trouble before they were eliminated.

This counterattack was one of 17 such assaults the Germans launched during an 11-day period. The units staging these attacks varied in strength from a company to a battalion. Tanks, closely coordinated with the infantry, were used in 13 of the actions.

On another occasion a U. S. division was conducting a successful attack until it was hit hard from two directions by two counterattacking forces, each composed of two German infantry battalions supported by tanks.

The counterattack was conducted by troops from a German division which had been believed to be far in the enemy rear, and was launched without warning at first light. There were no feints and no artillery preparation, other than what seemed to be a normal shelling of the American positions. However, the American salient in that area was ringed with a horseshoe of German artillery fire, which maintained an effective fire screen both before and during the counterattack.

As a result of these aggressive defensive moves on the part of the enemy, the Allied commanders in that area reached the following conclusions:

With the lengthening nights, and with limited air observation and photography during the day, the enemy has demonstrated that he can mass a large force—two divisions with as many as 50 tanks—in an assembly area close to our lines without any of our forces becoming aware of it.

Then, taking advantage of the morning fog or haze, he can attack and be on us with less than a half-hour's notice. These conditions and the proximity of wooded areas greatly increase the necessity for alert observation posts, listening posts, air observation posts, aggressive patrolling and defensive preparation for a variety of eventualities. Rapid, complete dissemination of each bit of information to the next higher echelon frequently can produce the picture of lurking dangers, and disaster may be avoided.

The increase in enemy artillery fire is the most significant change since the Normandy operations. Decreased aerial observation and photography makes it more difficult for our artillery to locate and thus neutralize the enemy's guns. So, greater

emphasis on accurate shell reports, and pointed interrogation of prisoners of war as an aid to location of batteries, is needed.

The Germans' selection of the swamps west of the Meuse as a spot to employ two of their best mobile divisions is a startling reminder that the enemy cannot be trusted always to attack according to the "book." They remain clever, aggressive foes.

MODEL'S METHODS

After the first day of the Ardennes counteroffensive, Field Marshal Model issued an order analyzing the U. S. defenses and setting forth certain attack principles to be followed by the German forces.

Quick exploitation of the successes of the first day of attack was urged. Model regarded such exploitation as decisive. The first objective, he said, was to achieve freedom of movement for the mobile units.

To this end, the U. S. main zone of resistance was to be broken through at its weakest points. These points were to be discovered by reconnaissance in force along the entire front.

The weakest strongpoints were to be taken by encirclement, with simultaneous concentration of fire by artillery and heavy infantry weapons, and by the use of tanks or assault guns. The neighboring strongpoints were to be neutralized by fire or by smokescreens.

Wherever possible, strongpoints were to be bypassed, and left for the reserves to deal with. "Exaggerated attention should not be paid to temporary threats to our flanks," Model said.

The main effort in antitank defense was to be undertaken by the leading units. The units were to be in a position to defeat U. S. reserve units quickly. The remaining antitank weapons were to be distributed in depth throughout the attacking or advancing units.

"Artillery preparation for the attack must not be handled in a shortsighted manner," Model declared. "If, for some reason, the infantry is delayed and cannot break in after the last round of a period of fire has been delivered, observed fire must be continued until the infantry is ready to break in."

DISTRIBUTION:

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